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ABSTRACT

The guide presents information on technical aids that can assist children with disabilities. Information on aids, materials, equipment, and adaptation is presented for the following topic areas: the child's room (bed, chairs and tables), the bathroom (toilet); clothes (dressing and undressing); the kitchen-dining area (eating and drinking, utensils); play and hobby (musical instruments); conveyance (wheelchairs, tandem bicycle); outdoor sports and play (winter, summer); accessibility (children's safety, dwelling adaptations); communication; adaptability (of commonly used objects) and the school. A list of suppliers is provided, followed by listings of references and resources. (CL)

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The More We Do Together

Adapting the Environment for Children with Disabilities

Monograph No. 31

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EC 181 398

THE NORDIC COMMITTEE ON DISABILITY

IN COOPERATION WITH World Rehabilitation Fund

International Exchange of Information in Rehabilitation

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Foreword (Original Swedish)

This publication on technical aids for handicapped children has been prepared by a project group of the Nordic Committee on Disability, a cooperative organ of the Nordic Council of Ministers.

Included in the project group were:
Karen Rygaard, ergonomic therapist – Denmark
Erica Ottelin, ergonomic therapist – Finland
Claus Thor Larsen, researcher – Norway
Pia Winnberg, children's technology consultant, (project leader and primary author) – Sweden
Finn Petrén, Director, The Nordic Committee on Disability (responsible for project)
Margareta Bergner Samuelsson has done all the illustrations.

The publication's title, "The More We do Together" with the subtitle "Adapting the Environment for Children with Disabilities," hopefully intimates that this is not any traditional product cataloque. Our ambition, therefore, has not been to give a more or less complete picture of what products are on the market.

Rather, what we have chosen to do is put together a book of ideas, a publication which can serve as an introduction to the field of technical aids for disabled children. Such an introduction can be used by parents, clinicians and other personnel in children's rehabilitation. Furthermore, if this publication can seem inspirational for clinicians, those who develop products, etc., then our goal has been reached.

This publication was printed at the same time in Denmark, Finland, Norway and Sweden. In that connection, certain minor changes for national conditions have been made. In Sweden the cost of printing was defrayed by the Swedish Institute for the Handicapped.

THE NORDIC COMMITTEE ON DISABILITY

Finn Petrén

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U.S. Foreword and Acknowledgements

The International Exchange of Experts and Information in Rehabilitation of the World Rehabilitation Fund of the United States first saw "The More We Do Together" in Swedish when Åke Olsson of the Swedish Institute for the Handicapped sent it to us almost two years ago fresh off the Swedish presses.

We had such a positive experience with the Swedish Institute for the Handicapped in the production of an English language version of the book which became WRF Monograph No. 20 – **Adapting Work Sites for People with Disabilities: Ideas from Sweden** by Gerd Elmfeldt et al. that we were looking for another collaborative publication. We found the quality of the first Swedish publication so outstanding that we wanted more! And we wanted to "do more together!"

When we expressed enthusiasm for JU MER VI GÖR TILLSAMMANS (The More We Do Together), Mr. Olsson put us in touch with Finn Petrén of the Nordic Committee on Disablility, the umbrella organization responsible for the book, and we got his permission to translate the book from Swedish to English.

We also contacted Alexandra Enders, a U.S. expert on aids for children with disabilities and ABLEDATA at the National Rehabilitation Information Center to get a companion list of U.S. suppliers of the aids. You will find in the back of the book a list of European suppliers and a second longer list of U.S. suppliers of the same, similar and other aids. Therefore, we are certain that this book will be a useful tool for those individuals in the U.S. who work with disabilities – just as described in the foreword which was prepared for the original book.

The text has been translated by Paul Hoover, who works for the World Rehabilitation Fund. We have not attempted to insert too many U.S.-isms, nor have we taken out Swedish references, of which there really are only a few. The illustrations which are beautiful, we recognize are very "Scandinavian." We decided we would not try to make them look more "American."

We feel strongly that this book communicates what the title tries to convey and we want to express our deep appreciation to the Nordic Committee and the Swedish Institute for producing such a warm, human book and for allowing and encouraging us to adapt it for our use here in the U.S.

We are very grateful to Mr. Finn Petrén who has helped considerably in facilitating this activity, as well as Uffe Berggren.

A valuable contribution has been made by ICTA Information Centre in Sweden. The ICTA Information Centre is operated by the Swedish Institute for the Handicapped and Rehabilitation International.

The National Institute for the Handicapped is to be congratulated for encouraging the World Rehabilitation Fund in its attempts to enhance the knowledge base in the U.S. through the "importing" of knowledge and expertise from abroad which is being done through a grant from NIHR.

James F. Garrett, Ph.D.
Executive Vice President
and
Principal Investigator

Diane E. Woods, Editor
Project Director
with
Theresa Thompson Brown
Project Assistant

International Exchange of Experts and Information in Rehabilitation

Commentary by:

Rachel D. Warren, Program Consultant United Cerebral Palsy Associations, Inc.

The More We Do Together is a warm and humanistic presentation of technical aids that can assist children with disabilities. The beautiful illustrations depict youngsters living with, learning with, and playing with family and friends. The examples of equipment carry forth a "doing together" theme as children are portrayed as active participants in the normal rhythm of life.

Prepared by a project group of the Nordic Committee on Disability, the authors consider this document a "book of ideas, a publication which can serve as an introduction to the field of technical aids." They further state "... if this publication can seem inspirational for clinicians, those who develop products, etc., then our goal has been reached."

This book goes far beyond a beginning discussion of technical aids. The focus on "we" as evidenced through the drawings, brings forth an attitude and expectation of sharing, integration, and independence.

The 70 page text is divided into the following chapters: (1) The Child's Room, (2) The Bathroom, (3) The Dining Area, (4) Play and Hobby, (5) Conveyance, (6) Playing Outdoors – Sports and Outdoor Life, (7) Accessibility, (8) Communication, (9) Manageability, (10) The School, (11) Supplies, and (12) Literature. At the end of each chapter, "tips" as well aids for hearing impaired, speech impaired, and visually impaired children are included. Throughout all chapters, an overall theme of acceptance is suggested by using words like "eating and drinking" instead of feeding; and "play" rather than socialization.

The writing style is very easy to understand and while the authors directed this publication toward a professional audience, it will also be a good resource for parents and community agencies. Parents will find many helpful hints for playtime as well as good ideas to meet the personal care needs of their children. Teachers for school, pre-schools, and Head-start along with leaders in clubs and groups (Scouts, 4-H, Y's) will also read about ways to easily accommodate disabled children into their mainstreamed programs.

The training aids range from simple to complex. Descriptions of the tools usually relate both the financial and physical costs to the parents and/or caregivers. These quotes illustrate this point:

> "Often common toys (or equipment) can be adapted so disabled children can use them. Handy parents often take the initiative and give ideas for such adaptation." Some examples cited were switches on toys, pegs around pencils, and suction cups on mugs.
>
> "... it is extremely important that those people keeping the child, usually the parents, pay close attention to how they carry out the activities associated with taking care of the child's physical needs, they may experience back problems or other physical disabilities later on."

Such sensitivity to physical costs to family is particularly evident in the sections on work positions, bathtubs, and beds.

Included along with the simple and "easy to find" equipment are more complex aids such as adjustable tables, bed guards, special seats for sail boats, Cannon Communicators, light indicators, etc. The index categorizes the aids by chapter, and states availability in the categories of homemade, open market, or supplier. If the equipment is by supplier, then a name and address is given. (It should be remembered that professional input may be helpful before purchasing technical aids.)

In summary, **The More We Do Together** is a refreshing idea book which was developed to stimulate ideas on technical aids. What is revealed through sensitively selected words and illustrations, however, is a humanistic portrayal of acceptance and intergration of the child with a disability.

Perhaps:
ADAPTIVE AIDS + a CARING ACCEPTANCE will = a CONVENIENT DIFFERENCE!

Preface

How to use the book – **The More We Do Together: Adapting the Environment for Children with Disabilities:**

The World Rehabilitation Fund is pleased now to present with the Nordic Committee on Disability a book on adapting and arranging the environment so that children with disabilities can participate with other children in as many activities as possible.

One of the ways of accomplishing this is with aids and special equipment, some simple, some more complex.

In order to make this book as useful as possible to U.S. readers, WRF asked Marian Hall at ABLEDATA (NARIC) to conduct a search for suppliers of items similar to those items and aids that appear in this book for which Swedish suppliers were already listed.

In the text of this book, the reader will find in **standard** type small numbers corresponding **only** to items which appear in the nearby pictures. Larger numbers appear in boldface at the end of paragraphs or sections and relate to an item group as it came up in the data search. These numbers show up in a list at the end of the book which corresponds to the various chapters. In this first list, after each item is named, the suppliers will be named. A complete alphabetical listing of suppliers can then be referred to in the pages that follow the first list. Wheelchair suppliers are listed separately.

For additional resource information, we are grateful to Alexandra Enders of Tools for Living who compiled the selected bibliography of "how to" books and organizations which appears after the list of suppliers.

This book is truly a collaborative work about which the collaborators are very enthusiastic. It is presented to you the reader with the hope that it will really make a difference.

Diane E. Woods, Editor

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3
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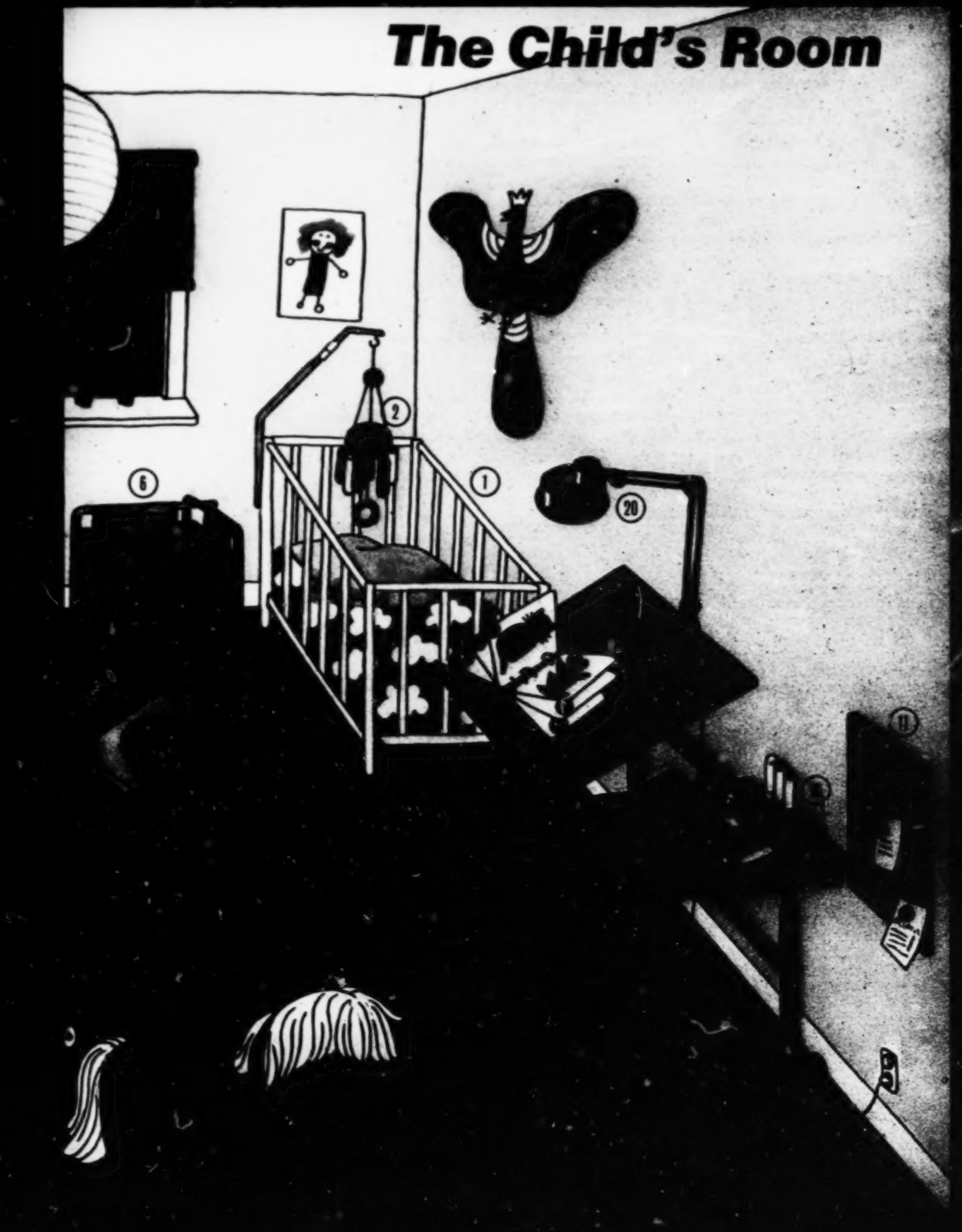
1

The Child's Room



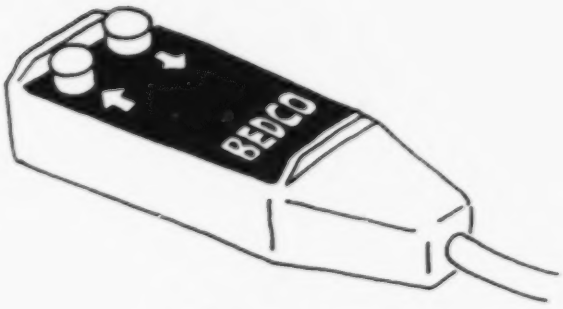
The bed

Where the bed is located in the room is of great importance, and every child's special problems must be taken into consideration. A child who has a tendency to turn always to the right, for example, ought to have his bed placed so all stimuli come from the left. In that way one diminishes the risk that any displacement of the spine and hips will occur. (See illustrations)

In general, smaller children sleep in **the usual crib**[1] which very seldom needs to be adapted. It is advisable to put some sort of **material for stimulation**[2] over the bed so the child has something to look at and feel, for example a mobile.

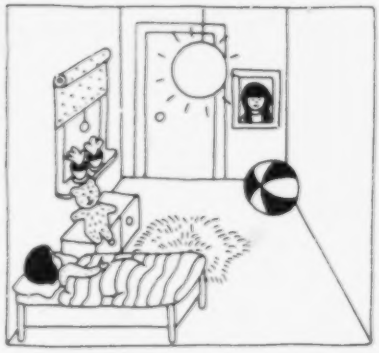
A junior bed[3] can often be adapted, for example by putting wooden head and foot boards and sides of **cloth**[4] on it to prevent the child from falling out. A cloth bed guard is easy to take off and to take along on trips, and it also holds the bedclothes in place. Bedguards in a translucent material, for example, plexiglass, have also proven to be useful.

It is often advisable to put an **electric lift mechanism**[5] under a junior bed. If the bed is low, it can be difficult for a mother or father to stand bent over when the child needs help with dressing and undressing or when making the bed. With an electrical lifting device the bed can be raised to produce the right height for working and lowered when the child is sleeping or climbing in and out of bed. The attendant's and the child's different needs are hard to unite in one and the same bed, and the possibility of raising and lowering the bed is, therefore, important for both.



Control switch for bed lift.

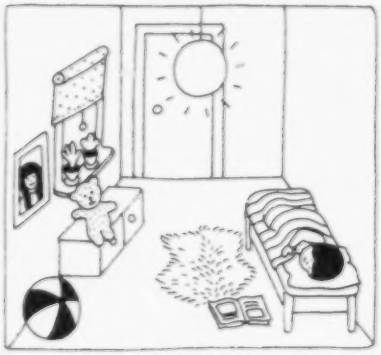
From Nancy Finnie's book, Handling the Child at Home.

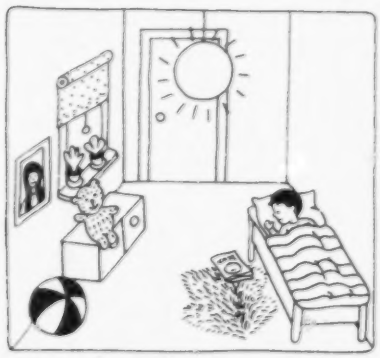


↑

Alternative solutions for placing a bed for a child who has a tendency always to turn to the right.

↓





Unsuitable placing of the bed. All stimulus comes from the right.

Numbers in the text above the item refer to same items in the pictures.

Chairs and Tables

Many disabled children cannot sit without support and are confined to special chairs. In the child's room it is advisable to have a chair, for example, **a Corner Seat**[6], to sit on when dressing and undressing or when sitting and playing. For some children a specially-made **foam rubber arm chair**[7] is the only alternative. Choose fireproof material or relatively incombustible filling.

As a work chair a simple wooden chair with arms often will serve, for example the **Bräcke Östergård Chair**[8]. It can be adjusted to different work heights at tables, benches, etc., by changing the blocks at the bottom of the chair legs. Even the **desk**[9] can be adjustable. An angled top is often good, for example, for children who have difficulties seeing. They can get near their work without having to bend too far forward. For the correct work position it may be advantageous to use a **footstool**[10] as well. A bulletin board[11] ought to be placed low so that the child himself can put up his notes and the like. Magnets are useful to fasten things with for those who have difficulty using their hands. (However, magnetic materal is necessary in the composition of the bulletin board.)

Training aids

These are beginning to be more and more like toys without losing their training properties. Often common toys are adapted so disabled children can use them. Handy parents often take the initiative and give ideas for such adaptation. These are suggestions which ought to be considered at any price, but which are often hard to make in quantity. **The horse on wheels**[12] is an example of this. **The play loco**[13] is an aid to walking and is a place to sit.

Training aids or adapted toys, what's the difference? **The pinball game**[14] is equipped with a foot bicycle pump to shoot the balls with air pressure. **The loose leaf book**[15] is a homemade idea which makes it easier to turn pages. **The pen holder**[16] consists of a block of wood in which the caps of felt tip pens are sunk. The pens stand up steadily when they are not in use and are easy to grip when they are needed.

TIPS:

A hammock of material or webbing can be good for some children to rest in.

A turnable bedtable can be appropriate and easier to reach. Bed blocks can be used as an alternative to a lift mechanism if, for example, it is only needed or tipping or temporary use, for example on trips. **No. 1***

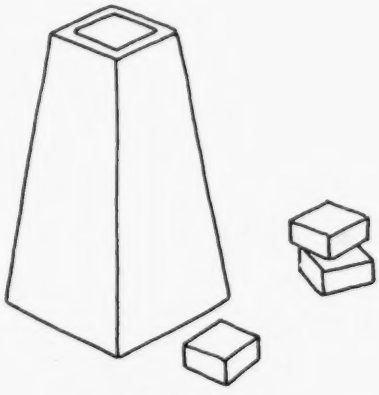
A sleeping bag can be good for children who involuntarily kick off the bed clothes.

Fitted sheets can also be useful; they don't wrinkle so easily and simplify making the bed.

Men's suspenders can be used to fasten bedclothes so they don't slip off the mattress.

An alarm system can be installed so parents notice when the child awakens or needs help, for example a **Gewa** alarm. **No. 2**

Notice that details of children's safety and adaptation of dwellings are further described in the chapter "Accessibility".



Bed Blocks

*Numbers which appear at the end of sections refer to similar items listed with names of U.S. suppliers in the back of the book. (See Appendix B)

For hearing impaired and deaf children

One way to exclude disturbing sounds when the child is watching TV or listening to the radio or record player is to use **earphones**[17]. Then the high volume which may be needed doesn't disturb anyone nearby. The earphones are often equipped with a volume control for each ear, so the sound can be adjusted individually, if one doesn't have the same level of hearing impairment in each ear. When using earphones, a hearing aid isn't needed. There are several different **devices for waking up**[18], but the most common is a vibrator. It is connected to an alarm clock with a cord and is placed under the mattress or pillow or is fastened to a leg of the bed. When it operates it vibrates so that the child wakes up. **No. 38**

For speech impaired children

A toy which can be used to stimulate a child to talk is a **teddy bear**[19] whose eyes light up when the child produces a sound. There are several types of aids which are used for attracting attention. A light indicator or an alarm system (one model – Gewa alarm) can be of great help when the child wants to make contact with his parents or someone else in its surroundings. **No. 3 & No. 36**

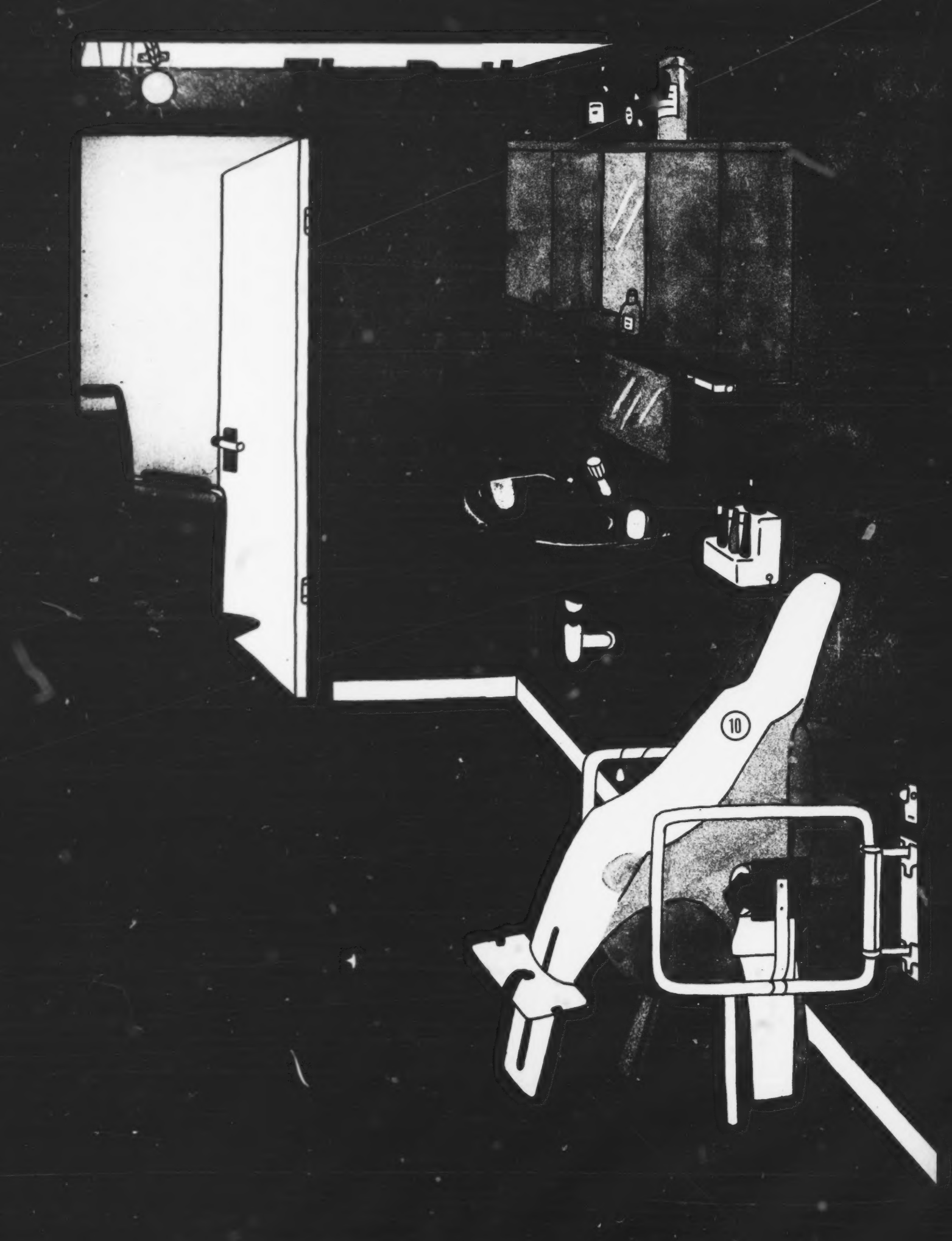
For visually disabled or blind children

A work light[20] is essential in addition to good general lighting. The work lamp ought to be jointed and adjustable so it doesn't throw shadows or blind the user.

Fluorescent tubes give off little heat, therefore they are preferable. The light's color and strength can be adjusted individually. **Contrasting color markings**[21], good color contrasts are essential so that doors, cupboards, beds, etc. are distinguishable from walls and floors. There are different types of clocks available so the sight-impaired and blind can tell the time. The clock face has markings which show the position of the hands. Alarm clocks, such as clock radios in which the clock turns on the radio in the morning, are very useful.

Notes

1

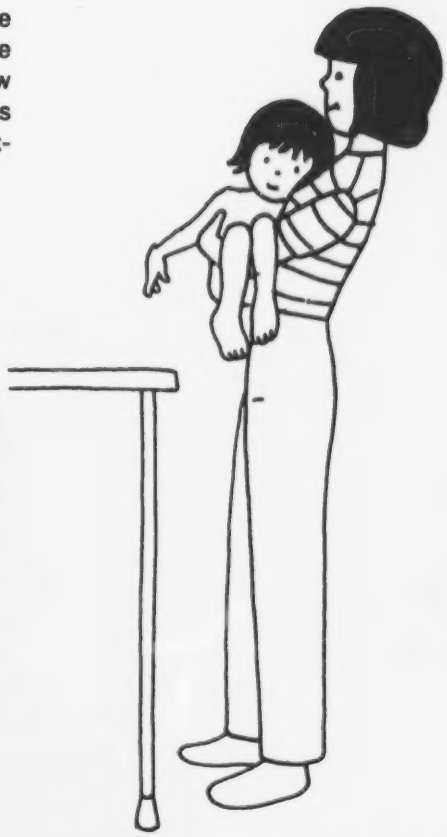

10

Bathroom and toilet space often must be adapted. Adaptation will vary according to the needs of the child.

Work positions

Disabled children often will need help with their personal hygiene throughout their childhood. Therefore, it is extremely important that those people helping the child, usually the parents, pay close attention to how they carry out the activities associated with taking care of the child's physical needs. If they neglect their own physical needs, they may experience back problems or other physical difficulties later on.

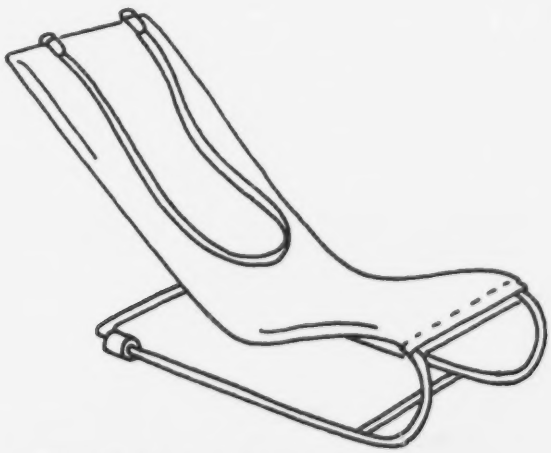
Lifting with straight legs and heavily loading the back should be avoided. A mother or attendant should lift the child close to herself and with bent knees.



A raised work surface makes lifting easier and reduces strain on the attendant's back/arms.

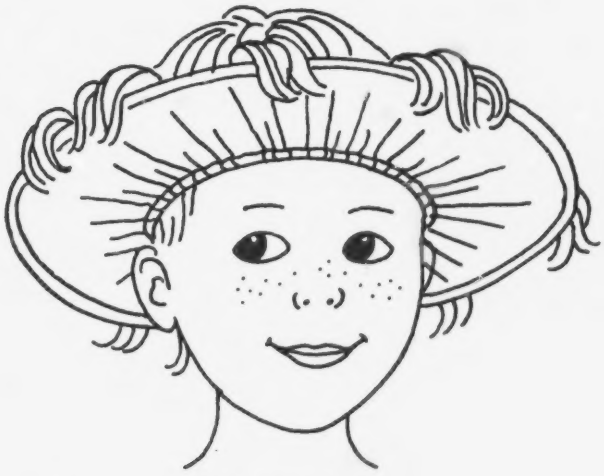
The Bathtub

An aid such as a **folding shower table**[1], **bathtub line**[2] or bathing chair as well as a **lift mechanism**[3] can be useful with the bathtub. The common bathtub mat with suction cups is quite excellent to have in the bottom of the bathtub. It reduces the risk of slipping and is available in extra long models. **No. 37**



Bathing chair is placed in the bottom of the bathtub. **No. 4**

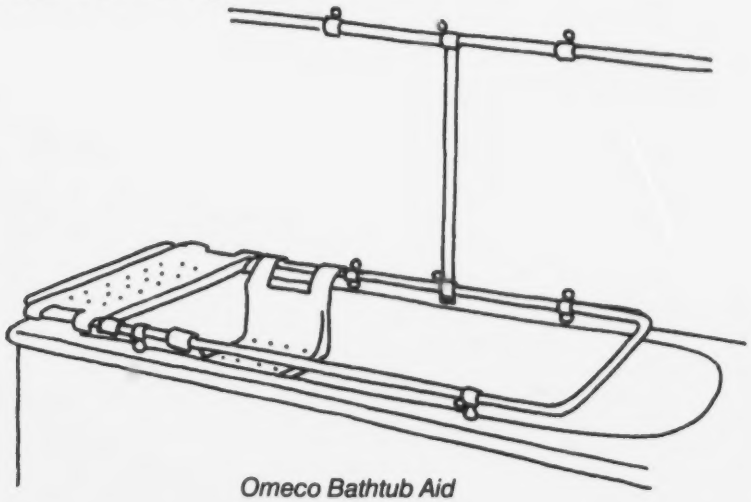
A one-handled faucet instead of the usual faucet makes it easier for those who have limited reach and reduced functioning of hands and arms.
A thermostat faucet[21] with protection from scalding makes it easier when the child himself wants to turn the water on and off and reduces the risk of injury from burns. **No. 39**



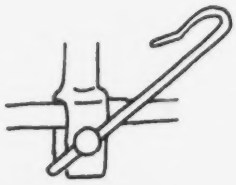
Shampooing screen

Swimming mask

Many little tips can simplify the time in the bathroom. A swimming mask or shampooing screen, for example, prevents the child from getting soap in her eyes when washing her hair.



Omeco Bathtub Aid



Key for Omeco Bathtub Aid

Bathtub aids are available in many models. It's even possible to build a system for a functional bathtub aid. Steel tubing of different types can be put together and in that way perhaps make complicated remodelling unnecessary. It's also possible to "grow with" the aid when one can by simple means rebuild, depending upon where the aid is needed. **An electric toothbrush**[5] has been shown to be useful for both those who have a hard time gripping and holding a toothbrush and those who have a problem with mouth hygiene. An electric toothbrush also simplifies things for those who can't manage the movement necessary for brushing. Often it makes it more fun, which can increase motivation for those who find it difficult to do.

TIPS:

Soap Bag – a terry cloth bag, for example, in which one puts soap scraps. Easier to grip than soap. **No. 5**

Wash Mit[6] – easy to pull on the hand, easier to use than a washcloth. **No. 5**

Bubble Bath – fun to use and "hide" in. Good for body comprehension games in the bath.

Soap-on-a-Rope[7] – soap which hangs on a thick cord. Easier to grip. It can all be slipped onto the wrist and is in that way easier to hold.

Bath Towel Poncho[8] – Easy to slip over one's head. Not so great a risk that it will fall off if the child moves around.

The Bathroom Door – Ought to be able to lock it from both sides.

The Toilet

A specially adapted **pottie**[9] or a **toilet adaptor**[10] – that's the question. The individual need has to be the deciding factor. In many homes, the bathroom is small and the space has to influence the choice of aids. **The assist rails for the sides of a toilet**[11] which are on the market usually aren't made in heights and widths for children but have to be specially adapted so they can be used with comfort. A detail one shouldn't forget is lowering the **mirror**[12] so a child or someone confined to a wheelchair can see himself. **A signal system**[13] by the toilet can be good if one should want to call for help.

TIPS:

Toilet Liner – reduces the size of the seat, for example, **Mothercare.**

Standard Pottie – **Baby Björn** and **Brio** have good, sturdy models, with a splash guard in the front. **No. 6**

For children with speech disabilities

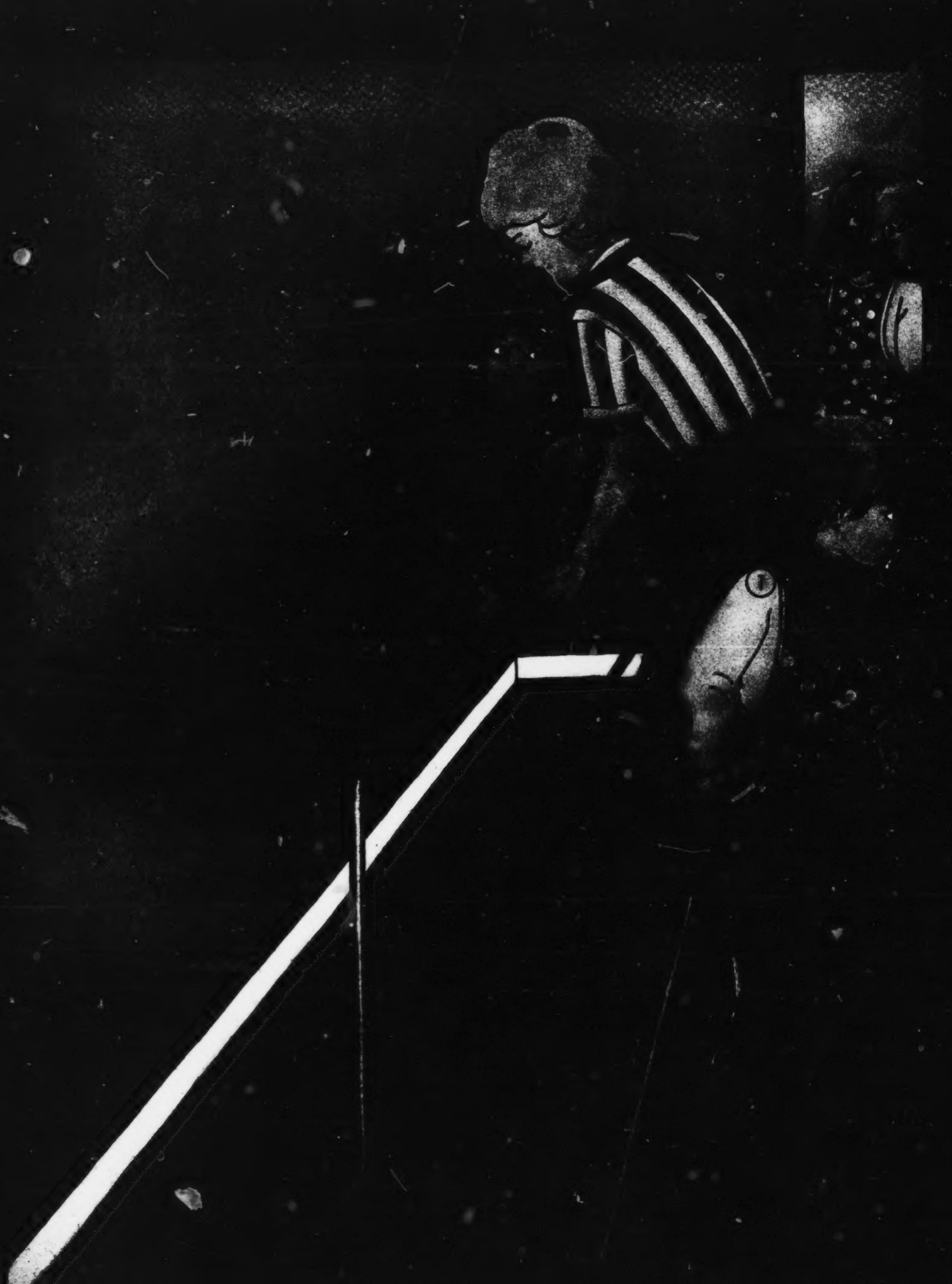
Attracting attention is a recurring problem for those with speech disabilities. **A signal system**[13] in the toilet is of great use when one needs help. They function in different ways, but one of the most common is a push-button contact which is fastened on the wall or on the toilet assist rail at the side of the toilet stool, easy to reach. When the child presses the contact, a lamp lights up outside the toilet space.

For children with visual disabilities or blind children

For most people the bathroom can be a dangerous place in the home, and those who can't protect themselves from the dangers find themselves in trouble. Water on the floor increases the risk of slipping. Therefore, it's important to keep the floor and other risky surfaces, for example the edge of the bathtub, as slip-free as possible. Different types of nonslip material can be used. There are many variations, for example nonslip strips, flowers, mats and so forth. Even the floor can be treated with nonslip paint which gives it a rough surface.

Hot water in the faucets means a risk for scalding for all children. A thermostat faucet makes it easier even for children with visual disabilities and blind children when the water can be set at an acceptable temperature. A soap bag and soap-on-a-rope (see the tips above) prevent the problem of soap slipping out of one's hand. Bath scales are available with appropriate marks.

Notes



Clothes

Clothes must be either adapted or made so they both fit well and are easy to take off and put on. In some cases clothes must be designed in such a way to make it easier for the parent or attendant who helps the child dress and undress. For example **a jacket**[1] can be made which has zippers along the seams of the arms. It's easier as well when the child is lying down to be dressed. A zipper can be equipped with a keyring so it's possible for the child himself to **pull the zipper up and down**[1].

A user of a wheelchair often has a problem finding pants that fit well. In the back there can easily be room between the waistband and shirt, and in the front they may wrinkle and bind. Several designers have come up with pants patterns which are suitable for those in wheelchairs. **The pant**[2] is cut with an extra high band in the back and low in front. For a child who crawls, it can be useful to **reinforce the knees of the pants**[3] with pockets in which foam can be stuffed. It makes it a little softer as well for crawling on.

Raglan sleeves or **kimono arms**[4] make the tight armhole a mere memory. The neck ought to be wide. Boatneck shirts and **sweaters**[5] are smooth and easy to pull on.

Many button arrangements can be simplified so the child can dress himself, using a strip of Velcro instead of buttons, for example.

Mittens[6] which are marked right and left can be helpful when learning the idea of left and right. Mittens of the traditional type with a right and a left mitten are easier to put on than a style where both look alike.

It's difficult to stay fresh-looking if the child dribbles. Above all, it can be embarrassing when the child gets a little older, when a bib isn't appropriate. **A bandana**[7] can be useful instead and is easy to change.

If one uses braces or splints on his legs, it's not easy to get clothes to fit.

A dress or **apron**[8] with a little fullness hides edges that may stand out. **No. 7**

Shoes are often hard to take off and put on, but certain simplifications can help. Elastic shoelaces, buckles or adjustable clasps on shoes make it easier for children who can't tie shoestrings. Shoes can even be equipped with **zippers**[9] as a compliment to strings. It simplifies putting on and taking off shoes, and there's still the possibility of adjusting the laces. Sheepskin slippers with Velcro on the heel are comfortable for children who have cold feet because of circulation problems. **No. 8**

It is important that training and technique are combined with the choice of clothes and aids.

Younger children need to train with games and toys, for example, dressing a doll with button arrangements in varying degrees of difficulty.

Markings for back and front greatly simplify things at this stage. Clothes can be marked in different ways: name tags in the back of the neck of outer clothes, different colors as a contrast for different garments. This can make it easier when children learn various concepts such as out-in, up-down, front-back, the names of different garments and so forth.

Dressing and Undressing

Aids for dressing and undressing are made in the first place for disabled adults, and there are only a few individual aids which can be used by children and young people.

There are clothing hooks in various designs, but they aren't always easy to use. They can be mounted on a **pole**[10] or on a **wall**[11]. If wall-mounted, they should be installed at an appropriate height. Even a door handle can function as a clothing hook (see picture of the Child's Room),

Adjustable Shoeclasp

a good thing to keep in mind when on a vacation trip or something similar, when it's not possible to take all equipment along. A sock aid can make things easier, particularly for the young. The "sock easy" model shown in the illustration below has proven itself to be the easiest to use. **No. 9 & No. 10**

Sitting on the floor in a corner gives good support when dressing, and for some children it is appropriate to lie on their sides while dressing or being helped to dress. Such advice can be as important as information about devices and special clothing.

TIPS:

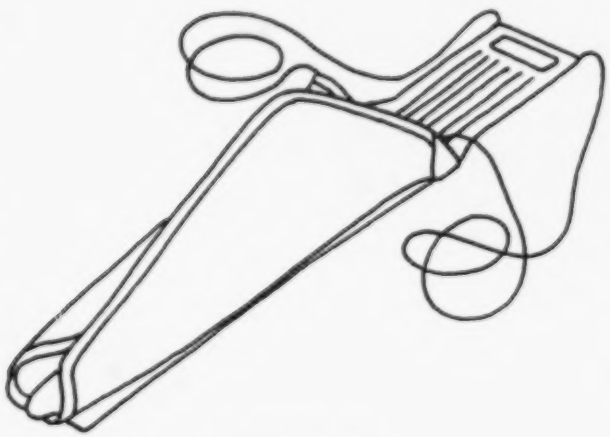
Loops in sleeve openings to fasten around thumbs so the sleeves don't slide up when putting on outer wear.

Travel Sack – the bottom part of an arctic jacket.

A special type of rain cape for a baby carriage is available which can also be used for a regular stroller and with smaller model wheelchairs. A raincape for wheelchairs is available in junior and adult sizes.

Overalls for disabled children are being developed by Estelie Rosenlew in Helsinki. **Cre Design** in Stockholm has developed two sizes of overalls, the smaller is distributed by Livskvalitet HLO AB.

Notice: Patterns for the clothes may be found in the book SIT AND STAND. It can be ordered from the Swedish Federation for Disabled Children and Young People, Stockholm. See the Bibliography. **No. 12; 12 A; 12 B**



"Sock Easy"

For hearing impaired children

A hearing aid can be fastened on the body but can also be put in a **pocket**[12]. Sometimes it may be necessary to sew on a special pocket for the hearing aid, or place it in the upper half of a two-piece bathing suit, if it's a girl in question. A pocket may also be needed for the battery, preferably camouflaged so it can't be seen too easily.

For visually impaired and blind children

Keeping things consistently in order in the home simplifies things greatly for the visually impaired or blind child. Things will be easier to find in closets and bureau drawers, for example.

Markings on clothes, for example front pockets, inside and outside markings, can also help those who can't see. Color-coded markings with marks for twelve different colors can also be sewn on clothes to show what color a garment is. **No. 11.A**

Self-threading needles and other sewing equipment simplify tasks for those who can't see. (See also the chapter "Play and Hobby"). **No. 12.A**

There are sewing machines specially adapted for use by the visually disabled. **No. 12.A**

Notes

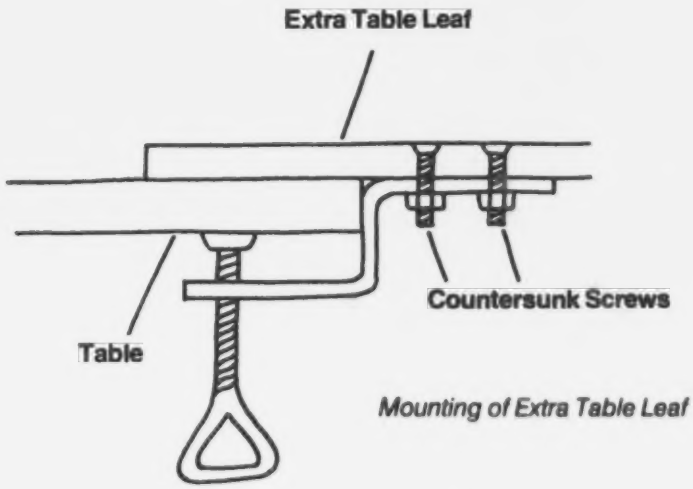
Kitchen - Dining Area
8
9
7

The Dining Area

In the kitchen we mention first and foremost the dining area which is an important link in the child's learning to feed himself as well as possible.

A correct sitting position is important if the child is to be able to use his arms and hands for managing tableware and glassware. The child should sit as upright as possible to facilitate chewing movement.

Tripp Step Chair[1] has an adjustable seat and foot support which can be moved precisely to the child's need. An extra **table leaf**[2] which fits tightly against the body can serve as an extra support for the trunk and arms. The leaf is fastened to the table and is easy to take off. It's important for the child to eat with the rest of the family.



Mounting of Extra Table Leaf

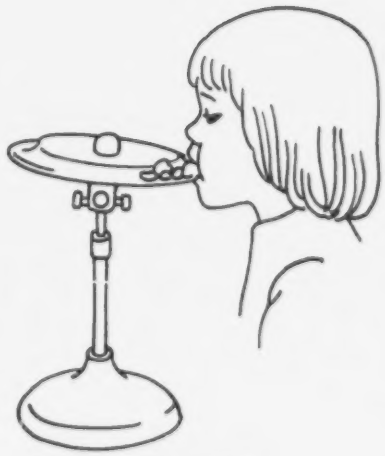
Eating and Drinking

A nonslip placemat[3], in individual pieces or by the yard, holds things in place, Children with limited arm and hand function often need a **raised edge on their plates**[4]. If a mug has a **lowered back edge**[5] the child doesn't have to bend backwards to be able to drink the last drops and doesn't risk losing his balance.

A handle on the table[6] to hold oneself up can be an important support for some children.

The spoon[7] should be shallow and not too large, preferably with a thick handle.

A rotating plate may be the only aid for someone who can't handle cutlery, but has to eat with his mouth directly from the plate. **No. 13, 14 A, B, C**



Rotating Plate

The Kitchen

The child's safety is most important during the first years. That will be described further in the chapter "Accessibility". When the child is older, there are other needs when young people want to prepare simpler meals for themselves and the kitchen may need to be adapted.

Kitchen utensils

Many special utensils simplify and make possible common kitchen activities. The aid can function, for example, as a helping hand for those who have only one hand to use. As examples can be mentioned a suction cup on bowls, **a one-handed rolling pin**[8] and **can opener**[9]. **The Gustavsberg Knife**[10] – a serrated-edged knife with an angled handle – makes it possible even for the very weak to cut, for example, their bread. An angled handle is also available on tableware and cheese planes[11].

A faucet knob turner can also be a useful utensil. See also the chapter "Adaptability."

TIPS:

Bambino Drinking Cup. A little oblong cup with one side shaped into a funnel so a child can drink without help from an attendant. **No. 14 A**

Rocking Mug – the mug has a rounded heavy bottom so it doesn't tip over – two handles.

Mothercare Mug – with cap and funnel – one handle.

Play Stove. Younger children often use the kitchen as a place to play in the proximity of the parents' activities. A popular idea is to turn a drawer upside down and paint burners on it so the child has a play stove.

In the stores there are many products which often are suitable for disabled children.

Training Spoon in plastic from **Mothercare**.

Keep-It-Warm Plate – Mothercare. The plate's underside, which is filled with warm water, keeps the food warm. **No. 14 C**

The "**Linje**" **Pattern** – Gustavsberg. The plates have raised edges, the cup a large handle. Plastic.

Straws can be cut from plastic tubing in different dimensions. The straw can be fastened to a glass with the help of an old-fashioned pen clip. **No. 14 B**

Straws of the MacDonald's type are large and thick and colorful. **No. 14 B**

Jointed Straws in plastic can be found in many stores. **No. 14 B**

Holder for mug with straw. In stationers. Holder for pens. See also the chapter "Manageability". **No. 14 B**

Bottle with Straw – useful for outings. **No. 14 B**

Spoon with a rubber cover is considerate to teeth. (American model.)

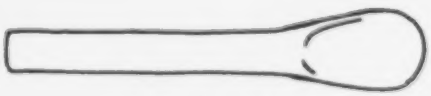
A Food Guard can be put on an ordinary plate. **No. 14.D**

Milk Carton Opener[12] stick it in the carton. Has a cap and makes it easier for those who can't manage to tear it open. **No. 40**

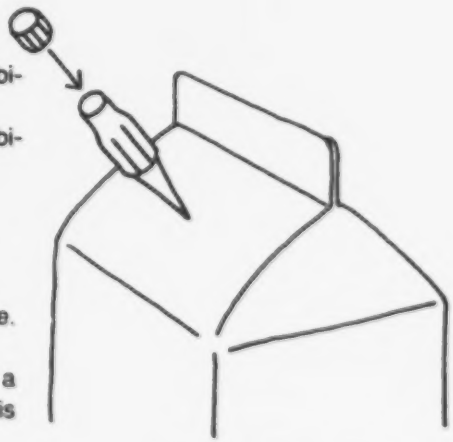
Various handles for flatware are discussed in the chapter "Manageability".

Details on safety in the kitchen are dealt with in the chapter "Accessibility".

Upside Down Drawer as a Play Stove



Training Spoon



Milk Carton Opener

For visually impaired or blind children

The dining area

A white plate on a white table covering can be extremely difficult to see. Contrasting colors can be helpful.

A nonslip table covering under the plate holds it in place. A plate with a vertical lip reduces the risk of food being shoveled off when the child is

learning to feed himself. It's very common to use a mug with a heavy bottom for small children. Blind or visually impaired children also have good use of a mug that doesn't tip over if one bumps it.

The kitchen - kitchen utensils

Things must be kept in good order if the visually impaired are to be able to find them. This includes the kitchen. Cans and bottles and the like can be marked with Braille so one knows what they contain. Many kitchen utensils found in regular stores are suitable for use. Markings on scales, time pieces and so forth can be made with the help of Braille on, for example, dymo tape. Aids which give notice through a signal, for example when water boils, are available and can be very useful.

An onion holder helps when one needs to cut slices. They are sold in most stores.

The Cutting Helper from Gustavsberg holds bread and other things in place when learning to cut with a sharp breadknife.

Notes

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Play and H
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Disabled children are often confined to playing inside when their ability to move about outside is limited. That is particularly evident in the winter when snow can be a big "handicap". With that in mind, the demand for play activities inside is even greater.

If there is a "playbrary" in the community, one ought to contact it and discuss the child's need for play and toys. The "playbrary" lends toys and gives advice and information on training. (PLAY LIBRARY)

Several fine toys have been made by parents with great imagination and creative ability. The hanger with material for stimulation, for example the **Swinging Toy**[1] is an example of this. There are play materials which stimulate the different senses and entice the child to touch them.

Even the play stove and **doll house**[2] are homemade. For that matter, it is striking to what a great degree suitable toys are wanting on the open market for these children's needs.

The dress-up clothes[3] were developed for children with handicaps but are as much fun and as useful for other children. The bells on the Alladin shoes and the bracelets stimulate body awareness and hearing, the backpack vest is good for learning the concept of "front and back".

Children confined to wheelchairs often sit at a table when they play. Therefore, suitable table activities should be found. Dice games are popular and special dice are available in various designs. One can also put ordinary dice in a children's **plastic mug**[4] with a cap (transparent) and a weighted bottom as well as two handles. It is easy to hold, doesn't tip and doesn't break if it's dropped.

Magnetic games[5], for example **Fia**, can easily be adapted so they can be used with the help of chin, forehead or mouth pegs. Enlarged gripping areas on the game pieces make it possible to use all games that the family or friends want to play.

It isn't always a question of needing special toys. Often ordinary toys can be adapted so everyone can participate in the game. **Controls for electric trains**[6] are well-suited for adapting. The disabled friend can then control starting and stopping the train, uncoupling cars, unloading and so forth. It really stimulates group spirit which is an important factor in the child's development. **No. 15.**

Hobby

In hobby activities tools often must be adapted with extra handles or supports of various kinds. See also the chapter "Adaptability".

A boating mug[7] is a container with a suction cup, useful to set a water glass in when one paints since it stays put.

The blund children's scissors[8] with a spring on the grip are invaluable for those who have a hard time holding ordinary scissors. Scissors of special design are available in other models as well, for example **sewing shears with a handle**[9] and scissors with a **whole handle**[10], left-handed scissors. **No. 12**

With an **adjustable carpenter's bench**[11] it's possible for children of all ages, with or without wheelchairs, to work to the best of their ability – something to think about when a hobby area is equipped.

Screwdrivers and other tools, for example sanding blocks, can be provided with special handles for easier use with one hand or by gripping with two hands. The tools are best hung up on an **accessible peg-board**[12]. See also the chapter "Adaptability".

A sewing frame for one-handed use[13] is an ingenious invention. It is also useful for the visually disabled; when the frame is turned from one side to the other, the front and backsides are easily accessible. **No. 12.**

Threading a needle for many is an almost impossible problem, which can be solved by using a needle threader that can be fastened to a table top. Some sewing machines are adaptable for the disabled. **No. 12**.

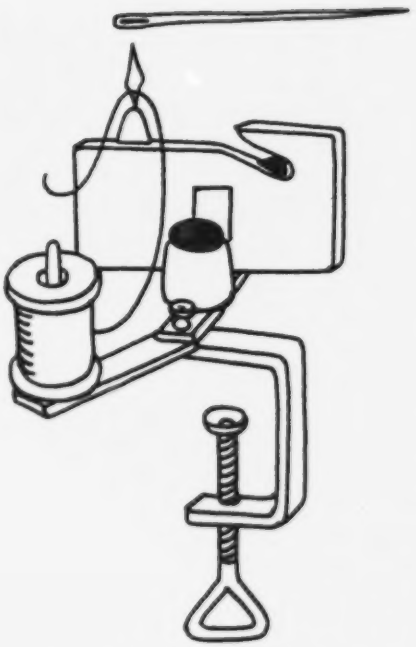
Block printing or stencil printing is also a popular hobby activity, even more so when it's time for Christmas cards or a new emblem on a T-shirt, for example. Block print stamps are easily adapted with different, easy to grip handles. These are described more fully in the chapter "Adaptability".

Musical instruments

It isn't uncommon for musical instruments to be equipped in such ways that they can be handled by children with limited ability to move. **Maracas**[14] equipped with hand straps, and bell bracelets, which are fastened around the wrist, are often used as rhythm instruments for children who have a hard time holding things.

Instruments frequently need to be fixed or stabilized with some sort of device, for example a **holder for drums**[15]. Wind instruments and flutes, **drumsticks with special handles**[16], keyboards to electric organs and "**touch-a-tone**" **electronic pianos**[17] have all been adapted so the musicians are able to use them.

The music boat[18] is a toy and a musical instrument for younger children which also offers a suitable place to sit.



Needle-threader

TIPS:

A sponge can be used instead of a brush when painting with water colors.

Paint Brush – thick handle with straight bristles.

Glue Stick – glue in stick form with a thick handle.

Needle for sewing elastic – equipped with a ball instead of a point and with a large eye.

Training Needle – extra large and thick needle.

Holder for camera – for fastening to a wheelchair.

Weaving Ring – Danish idea – weaving on a bicycle wheel:Tools may be hung in a wall display on a wheel. Then the children themselves can get them and put them back in place.

A mitre box holds the saw steady while sawing.

"The third hand" – clamp on a ball joint.

Toy Bow – to put on a wheelchair table or any other table. Toys can be hung on the bow so the child can more easily see, feel and hold them.

Jump Rope for children with disabled extremities, with **special handles**[19].

ADL Tent – a piece of material which is put over a table. Windows and doors have snaps for opening them with. Excellent to play "house" in.

Weighted animals – stand fast when pushed about.

Table for water games – makes it possible for those confined to wheelchairs to get close.

Magnetic playing cards and holder. The cards stand upright in a stand if one cant't hold them oneself.

Dominoes. They are furnished with current and common, for example buttons, keys, pens, capsules items for sensory motor training.
Adaptation of controls is also advisable for slide projectors which can be of special interest for children a little older.

For hearing impaired or deaf children

Children often like to recognize themselves in a doll. It helps to strengthen their conception of themselves, which is especially important for a handicapped child who frequently experiences himself as different from everyone else. For children with hearing aids there is **a doll**[20] which has a little model of the type worn on the body stuck in a pocket. The doll is made of material and the hearing aid is wood with a string as cord.

For visually impaired or blind children

Play

Play is important for all children and is essential for children to develop in a satisfactory way. This is true to a great degree of visually disabled children as well, with the difference that these children are more dependent on others helping and simplifying things so the child gets the optimal possibility to develop through play. This help should start early so the child doesn't become passive.

The child must learn to hold objects, use both hands at the same time and coordinate movements, which is hard when one doesn't see his hands. **Balls**[21] of various sizes, with or without sound, with depressions in them or soft with foam rubber and covered with terry cloth are good to begin with. A ball that makes sound is easy to make by tying a plastic bag around a ball. For children with low vision, color and contrast are important. Material for stimulation hanging over the bed or carriage or within reaching distance of where the child is , is tempting to hit, stretch after and feel. These toys stimulate the child to use his hands. (See also the chapter "The Child's Room".)

The Russian doll and similar toys teach the child to use both his hands and to fit together different parts and sizes.

The hammer mosaic appeals to the visually impaired children who are a little older. Here one uses a wooden hammer to hammer woden pegs of different colors and forms into fanciful patterns.

Books for visually impaired children are available as a basis for play with strongly contrasting colors and tactile elements. Even on the open market there are some good books with large print.
(Idea: Lea Hyvärinen, Finland)

Many games have been adapted so they are suitable for those who don't see, for example a Lotto game with different surfaces (cloth, sandpaper, etc.), Parchesi with playing pieces that are easy to identify by touch and a gameboard which has holes instead of colored spaces. Twelve-edged dice with different surfaces make it possible to feel which number has been rolled.

A Drawing Plate – One draws with a regular ballpoint pen on a special plastic tablet with a rubber plate underneath. The drawing comes out in relief.

Hobby

It's possible to adapt most activities for children and young people, but often a little help is needed from a grown-up. A sewing frame may be used for needlework, where the work is stretched on the frame, simplifying things for those who need a free hand to orient themselves. There's also a self-theading needle, but a needle threader is more common and available in several models. Sewing machines for the visually impaired, knitting, rug knotting and weaving are also good activities for those with low vision.

Many young people with seeing difficulties go in for amateur radio operation and in that way can make contact with many others both in their own country and abroad.

Some have as a hobby listening to birdsongs on tape. The equipment for that needn't be particularly expensive.
Various collector's hobbies are appropriate, for example stamps and coins, and magnifying equipment of some sort may be of help. **No. 15**

Musical instruments

For the visually impaired music is often of great importance since they are forced to obtain experiences through other senses and hearing is perhaps the most important. The younger children have great pleasure in the same rhythm and percussion instruments as children who see. As well as giving pleasure, music also can create physical activity. Children are stimulated to sing, dance, hop or keep the rhythm.

The zither has shown itself to be a good instrument for visually impaired children as early as about 7 years old; so is the electric organ .
Earphones ought to be available if one wants to keep peace in the family. There are jacks for that on most TV's and radios, stereo sets, cassette players and electric organs.

Of course there are many other musical instruments, for example piano, guitar, harmonica, violin, flute and rhythm and percussion instruments, but the use is the same as for children and young people who see.

Sheet music in Braille can be used as a complement to regular sheet music in a limited way. Most often, regular sheet music is used with the help of magnification or other optical aids. Good lighting and a good music stand shouldn't be forgotten. Such items may influence to a great degree what type of sheet music is needed.

5
FFT 286

For children with disabilities conveyance problems are many and of various kinds.

Young children are conveyed in precisely the same way as other children, in baby carriages. The need is seldom otherwise.

The problems arise when children get older and outgrow the usual types of carriages. There are then **special strollers**[1] in various sizes and models which fulfill most needs. They work well, for example, on asphalt, but it immediately becomes more difficult when it's a question of transport in hilly terrain, forest paths and the like. That is dealt with more thoroughly in the chapter "Sports and Outdoor Life".

Children who have outgrown baby carriages and children who have severe disabilities need special **chair/stroller or wheelchairs**[2]. These are available with chassis and heavy tires to cope with outdoor wear and tear. Stroller or wheelchair? It can be difficult to choose. The stroller is easy to handle, put in a taxi, car, bus, etc. The wheelchair from the child's point of view is often more acceptable. For example, at school age it is "childish" to be transported in a carriage. The wheelchair also gives the child a chance to begin to drive himself. **No. 16.A & No. 16.B***

It is everyone's aspiration to be as independent as possible, and the goal many set for themselves may be to move oneself around indoors. Outdoors it is harder and then help may be needed. This means that we must think of the conveyor. **Wheelchair handles**[3], which are mounted on the chair so the one who's driving gets a proper grip, are worth trying out.

The electrically powered wheelchair, **go-cart**[4] and the Permobile have made many disabled children independent and active "outdoors children" starting in a limited play and park area, but later when it's a question of a motorized wheelchair or Permobile, even out in traffic. Maneuvering has to be learned early, traffic rules come later with increased maturity and independence.

When it's a question of longer trips, a car is what is used most, and the youngest children travel here also like other children, in a baby carriage, basket or child's car seat. The problems with car travel arise at about 5–6 years of age, and sometimes a bit earlier, when the usual equipment no longer works. The need for special car seats is great and the offering minimal.

Young people who themselves drive their cars can get in and out of the car easier with a **swivel seat**[5]. Equipment for that purpose is available.

For trips to and from home, school, treatments and the like it is often taxis and public transportation that are turned to. In a taxi there are very seldom any special arrangements for handicapped children. Despite that, most trips are by taxi. Public busses are provided with a lift. Something similar can also be used on minibusses. Ramps of various sorts may even be adapted for use with private vans like the Fiat and VW models. A folding ramp is also used with cars.

TIPS:

Baby Buggy and Major Buggy strollers. Umbrella carriage – good for trips by plane, train, etc.

Rain Capes[6] and travel sacks are available in various models for strollers and wheelchairs and in different sizes.

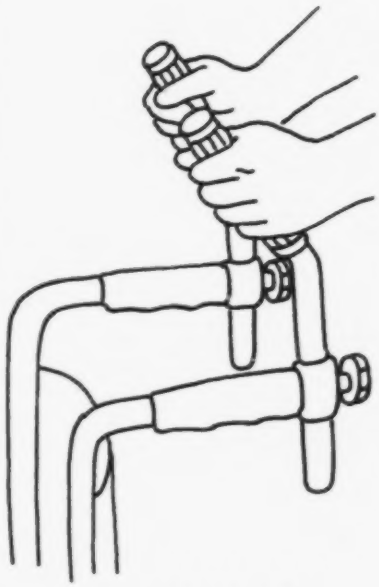
Carrying Frame – See the chapter "Accessibility".

Gull Chair – to be used for shorter trips.

Twin Stroller – standard model. Often suitable for disabled children with small brothers or sisters or children with bulky hip castes.

Baggage space – special arrangement for transport of aids, for example wheelchairs.

Seat belts – for fastening in car seats, wheelchairs, etc.



Wheelchair handles

*See separate list for Suppliers of Wheelchairs.

For visually impaired or blind children

A tandem bicycle[7] can be used for training and for outings. With the help of a tandem bike a school child can also get to and from school, a club, scouts and so forth. Either a parent, a brother or sister or a friend rides with the child. A friend might think it fun to ride a tandem bike and do it not as a sacrifice or just to be nice. **No. 17; 42**

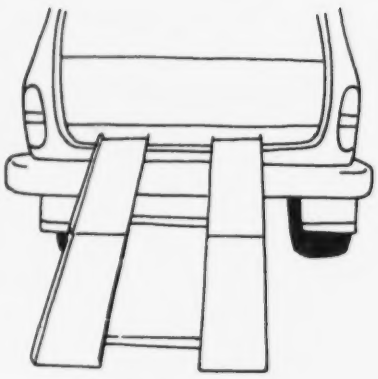
Traffic signals with sound devices make it easier when blind and visually impaired children want to learn to deal with traffic independently. Bus drivers who use the loud-speaker to announce the names of stops greatly simplify the trip for someone who doesn't see so well.

A special compass, differing from a common compass, has a magnetic disk instead of a needle. It also has a lid. When the lid is open the magnetic disc can't move, and then it's easy to feel which way the disc points. As well, the points of the compass are marked in Braille. The special compass isn't an aid for the sport of orienteering, but can be used in every day life, for example together with a relief map.

A relief map of one's home tract or some other area can be made. The map is made of pressed plastic, and the blind person can feel the contours of roads, paths, etc.

The drawing plate mentioned in the chapter "Play and Hobby" can be used for drawing simple relief maps.

For those with low vision, binoculars can be a great help in reading signs.



Folding Ramp

①
②
①

oors
Life
1
Samba
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Winter

Disabled children's opportunities for outdoor activities vary greatly with the seasons. Existing winter aids are meagre and "happy independent summer children" all too often become the exact opposite in winter, mostly because of snow which prevents them from using the aids which are used the rest of the year.

"Common" winter equipment, for example the **Snow Racer**[1], sled and scootersled, can be adapted with foot plates, seats, extra back support and harnesses and then function satisfactorily. Children, however, are seldom independent with these aids but need assistance. The scarcity of winter aids is pronounced. In the summer, however, there is so much more to choose from. **No. 19**

Summer

The Sandbox

Young children get along best in a sandbox and perhaps need a support for sitting. Both the **Charlotta Chair**[2] and the **Corner Seat**, (see the chapter "The Child's Room"), are used regularly in that context. The Corner Seat is made of light metal and canvas, is collapsible and is easy to take along to the beach. The canvas seat never gets hot in the heat of summer and therefore is comfortable to sit on. **No. 34**

The **Sandbox Table**[3] has liners for both sand and water and has a recess for the waist. It's a suitable height for both standing and sitting children. A swing[4] may be adapted in many ways. It isn't uncommon to use a beer case; it works! **No. 18**

The Bicycle

The tricycle plays an important role in a child's development. It is a toy, a means of transportation and a way for social contact all at the same time. It should be easy to pedal, sturdy, have many possibilities for adjustment and should most preferably not differ from other children's bikes, but be cool and willingly invite contact with other children, as an example the **Alpha Cycle**[5].

Older children ride either special large tricycles or on standard bikes with training wheels. The large tricycle is easier to ride and is why these two types complement each other with respect to the degree of difficulty.

If the child himself can't ride, it can be worth trying the **Mini-Maxi bicycle cart**[6] which is fastened to the rear of the bike. It can be complemented with a special seat so the child sits comfortably during his ride. The cart is even collapsible should it need to be transported, which means it's a popular aid for vacations. **No. 17**

The Water

Disabled children can to great advantage move about and train in water and often have greater freedom of movement than on land. Usually no aids are used for swimming, but during training and water games it may be worth mentioning a few.

The **Reyma Bathing Cap**[7] blows up like a bathing ring and makes it easier for those who are afraid to get their heads under water. The air can be let out by degrees as the child's fear subsides.

Special rubber swim trunks are used by children who use diapers and should be tested with great care to be sure they will function satisfactorily. In public pools it is generally required that these children use this type of aid. There are also swimsuits with air canals or pockets of plastic which function as an aid to floating. These shouldn't be confused with the swim trunks. **No. 19.A**

Sports

In recent years the intensification of sports for the handicapped has influenced aids in a very positive direction. A lot of children start learning how to maneuver wheelchairs already at preschool age to be able later to take part, for example, in wheelchair basketball, field hockey, etc. Special wheelchairs[8] are constantly being developed, and the conditions for fast transport by small means have increased considerably.

Older active young people often serve as leaders and role models for the young who are spurred on with a new will.

Riding is also a popular form of sport for the handicapped, and several different aids are used, for example special stirrups. **No. 20**

The possibilities to take part in sailing camps and to sail a boat with a **special seat**[9] have opened the door for additional sports activities for the handicapped.

TIPS:

"Ice Spiking" is a new sports activity which is practiced primarily in Norway. One needs a light sledge with steel runners and a pair of short poles which one "spikes" oneself forward with.

Wheelchair Skis – fasten under the wheels.

Wagon[10] – adapted with a seat.

All terrain stroller – being developed. Responsible: **Cre-Design**, Stockholm.

Pack Frame – for example **Haglöfs** – for carrying a child on one's back during walks in the woods and countryside. See also the chapter "Child Safety".

Bathing Collar – available in two sizes and inflatable.

Harness for yard work – to stabilize a spade, pitchfork or similar tools for a person with one hand.

For visually impaired or blind children

Winter

Skiing with a guide is becoming all the more common among visually impaired children, and in some places there are special ski trails to follow. In addition, in Norway there is a specially constructed plow which is used for making ski trails.

Ice skating is also a good winter sport for the visually impaired, but there shouldn't be too many people on the ice, and there should be a guide.

Summer

It is very important that visually impaired children be allowed to move about a lot. Overprotection should be avoided.

To achieve good foot development, to avoid flat feet, it is necessary that the child gets to run a lot or walk at a rapid pace. A handrope or similar guideline can supplement the services of a guide.

Riding is a fine activity for many blind children and young people. Riding has become all the more popular and the practical possibilities have also increased. See to it that the child always uses a riding helmet.

For swimming a sound beacon or battery radio can be used to help the swimmer orient himself. It is also easier if swimming areas are sectioned so that those with low vision have a given area to feel free in.

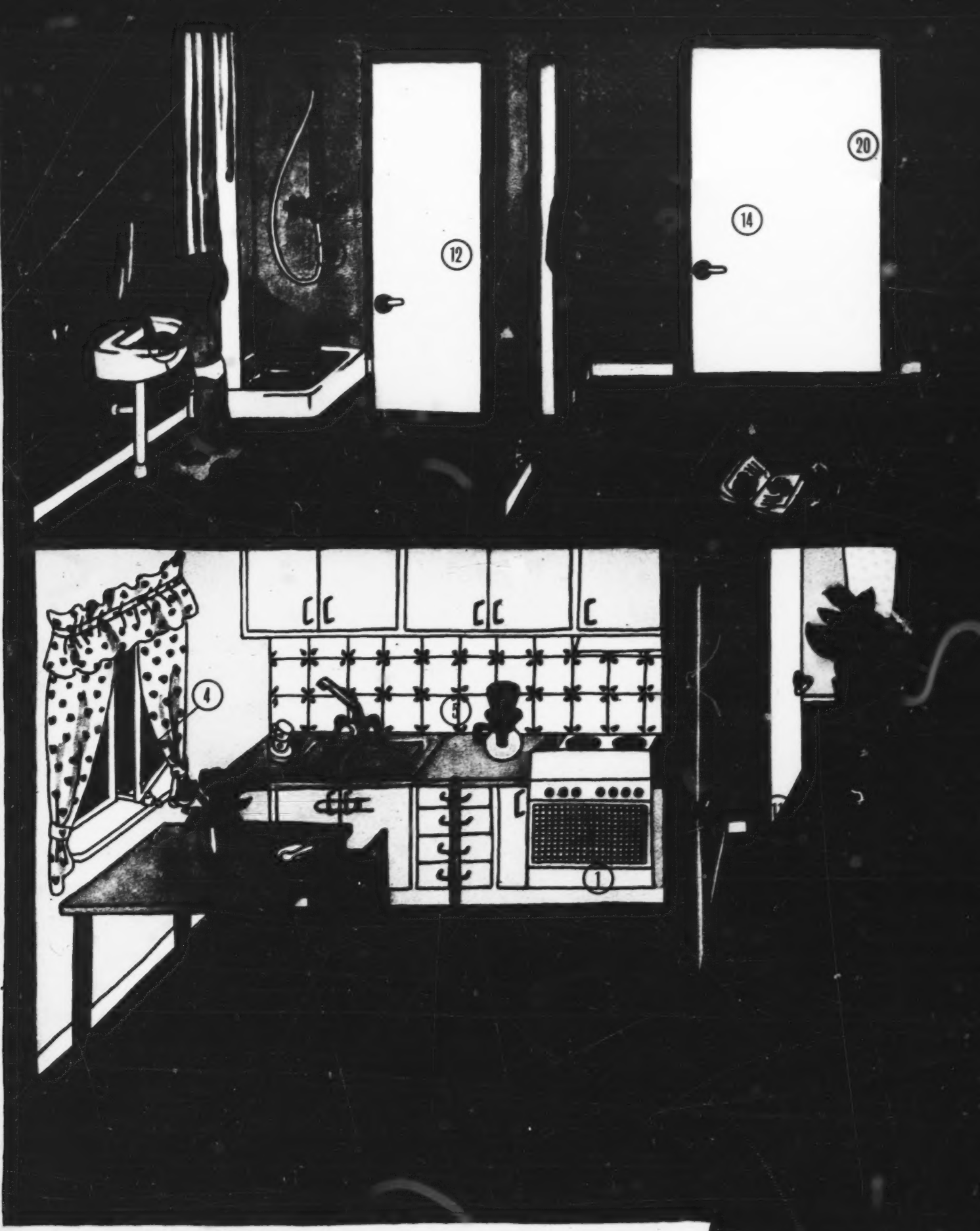
A tandem bicycle is very useful both for training and for longer bike trips. Inside, an **Ergometer Cycle** can replace cycling or be used as training in the winter in preparation for the summer's tandem cycling.

Orienteering can be practiced with the help of a special compass for the blind, along with special maps with terrain details marked in Braille. The control points can be marked with sound beacons. (See also the chapter "Conveyance")

Sailing can also be carried on by the blind with the help of adapted navigation instruments.

Track and field are quite common for the visually impaired. The most common events are running (with or without a guide), hurdles and the long jump. Under properly organized conditions, the blind can train to run by themselves.

Notes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Accessibility

Child Safety

Understanding of the significance of equipment for child safety has increased with the spreading of information about accidents involving children in the home, in traffic, etc. Many of these safety details are of great use for disabled children.

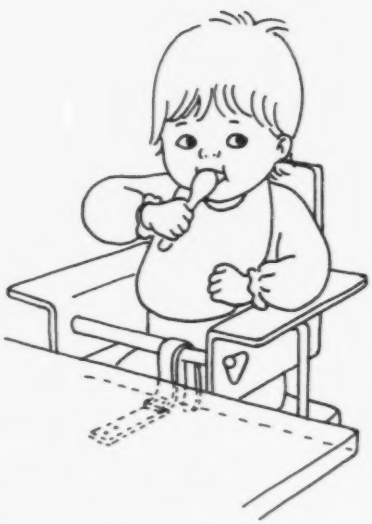
The home is a dangerous place especially the kitchen, if certain safety measures aren't taken. For example, it is appropriate to put a grating on the **oven door's**[1] so the child doesn't burn humself when he lays his hands on it. A stove top shield prevents the child from burning himself on the burners. Cabinets and drawers are interesting to open, but it should be possible to lock some of them. That can be solved by furnishing them with hatch and **drawer locks**[2] which are available in various models.

Disabled children often use a highchair at the table under different conditions than other children, and the risk of tipping over can be greater because of involuntary movement and spasticity. With **a furniture anchor**[3] which is fastened both to the table and the chair, the chair becomes steadier.

Windows ought to have child-safe security locks and **weathering fittings**[4]. A simple and inexpensive way to prevent injuries from scalding when brewing coffee is to get a Melitta funnel with an **extra long spout**[5]. All pans on the stove should have their handles turned toward the wall.

A protective helmet is recommended for children with balance problems. **A bicycle helmet**[6] – one of the sturdier types – has proven itself suitable for various outdoor activities for children with disabilities. **No. 35**

Since it's customary to adapt common equipment to suit these children, one must demand a good basic product. Sturdy **child-safe bicycle seats**[7] are quite suitable for adapting both for use on a bike and for other areas of use. **Children's car seats**[8] can also be used as seat liners in a variety of contexts. For example, they can be mounted on sleds, scooter sleighs, bicycle carts and boats.



Chair Anchor

TIPS:

Gates for stairs and doors.

Outlet Shields – plugs for electric outlets[9]. Taken out with the help of a special suction plug.

Bathtub Mat – protection against slipping, available by the yard.

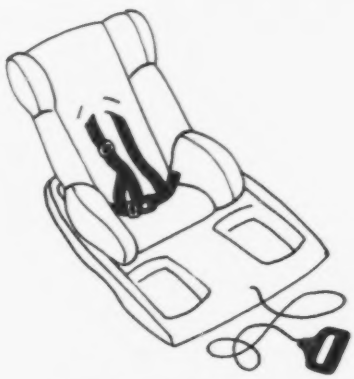
Foot Stool that doesn't tip[10].

Car Seat Belt Cushion – **Volvo Cushion, Klippan Cushion,** Kiddy Cushion.

Life Vests

Kid Carrier – for example **Haglöfs** – for children up to 40 pounds. To be carried on the back during walks in the woods, for example.

Kodomo Carrying Harness – not only good for outings, it can even be good for restless and tense children who need extra body contact. The body warmth, the movement and the favorable sitting position in the harness have an effect on the child who then will often become more relaxed. The physical contact with Mom or Dad which the carrying harness provides is as important for visually impaired children who lack the possibility for good eye contact.



Sled with Car Seat

Adapting dwellings

All children and young people need to become independent individuals. That is difficult when one depends on other people for all daily activities because of one's handicap. Therefore, it is important that development isn't hindered by insuffcient measures taken in the home environment.

Grants for adapting dwellings may be applied for in the primary community by the family or by the handicapped individual himself. The purpose is to give, for example, the family possibilities to make alterations in the private home so the handicapped child can become as independent as possible. The grant is limited.*

Here are several examples of measures for which the grant for dwelling adaptation can be used : In the kitchen, cabinets may be equipped with shelves that can be pulled out so they are easier to reach. Crawling children and children with walking aids or wheelchairs often have difficulties in getting over doorsills. It is appropriate to **remove doorsills**[11]. Some door openings are almost always too narrow for getting through with a wheelchair. Bathroom doors are frequently among the narrowest and **widening is recommended in general**[12]. Most often the greatest changes are made in the bathroom. For example, it is common to change the bathtub for a **shower stall**[13] as well as changing the faucets for thermostat faucets and one-hand operated levers. Nonslip covering for the floor reduces the risk for accidents from falling. The bathroom door should be lockable on both sides so the child can't lock himself in.

When adapting dwellings for a child it is important to consider lowering some details since a child's reach is limited. **Lowering door handles**[14], **light switches**[15] and the **bathroom mirror**[16] are common measures. It can be essential to complement the dwelling's entrance with a **handrail along the stairs**[17] and/or a **ramp**[18] for those who use wheelchairs. An automatic door opener may make things much easier for those who can't manage to open the door themselves.

It may also be appropriate to think about details of child safety when planning the adaptation of a dwelling. Frequently it's sufficient to give parents some tips on how the problem may be solved, for example with child-safe window locks, outlet shields, etc.

Notice: Wall-to-wall carpeting may be difficult for disabled and visually impaired children.

Aids are often bulky and need extra storage space, perhaps even with electric outlets. Storerooms may need to be expanded, extra garage space rented. Extra cellar storage space or something similar may be needed for storing bulky aids which temporarily aren't needed.

For hearing impaired or deaf children

To make it easier for hearing impaired and deaf children it is also important that the acoustics are good in the dwelling and other places where the child spends time. Acoustics can be improved in many different ways. Furniture, rugs and curtains contribute to diminishing echoes and decreasing different types of noise, for example the scraping of chairs and hard heels on floors. Sometimes further measures may be necessary. With wall-to-wall carpeting, acoustic tiles on the ceiling, porous wall material, sound insulating windows, etc. one can achieve an even better sound environment. Improving the acoustics in home to some extent dwelling adaptation grants can be used for.

*Applies to Scandinavia, not to the U.S. – yet.

For visually impaired and blind children

Contrasting markings on doorsills[19], door openings[20], steps, etc. Doors opening out can be exchanged for sliding or folding doors. Self-closing doors or doors opening outward are best in corridors. Doors with glass can be equipped with unbreakable glass.

Orienting oneself in the environment is simplified, for example, if signs, symbols and texts are designed and placed in appropriate ways, for example with good contrast effect and at an appropriate height.
Lighting conditions must be good.

Sound beacons may be installed in the home or work place so the handicapped will be able to orient themselves by the beacon's signals.

Handrails ought to be designed so they are easy to grip and they are marked with a stop or rounded off, so the visually impaired are warned when a stairway ends.

Wall-to-wall carpeting on the floor gives a child less possibility to learn how to interpret sound impressions, for example when something falls on the floor. On the other hand, it is absolutely an advantage to have rugs on the floor when a child is learning to crawl. A smooth floor allows too little friction. A rug on the floor or not is, therefore, not an either/or, but a both/and proposition.

Communication

There are various types of communication problems which are caused by handicaps, such as hearing impairments, visual impairments, speech, etc. One may have difficulties formulating what one wants to say, either spoken or written; or one may have difficulty understanding what others say or write. Not being able to notice sound or light signals may also be a communication problem. The problems can be especially large for children with several disabilities since they can't compensate, for example, by going up to or nudging a person to make contact.

Only a few examples of aids which may be useful will be mentioned.

Children who can't talk don't need to be prohibited from speaking with one's mother may be accomplished in different ways, and an alarm system (**Gewa Alarm**) linking the child's and parents' rooms may be the only thing needed to make contact with each other.

With the help of a control which needs only a little push from any part of the body whatsoever, the child himself may be able to attract attention.

A signal system may also be used, for example, in the bathroom. (See the chapter "The Bathroom – Toilet").

Door and telephone signals can be strengthened so children with hearing impairments have the possibility of picking them up. For deaf children use optical indicators for door or telephone signals. Speaker phones are good for the disabled who can't hold a receiver. Enlarged numerals make things easier for those with low vision.

A child who doesn't speak has to have his communication aid with him. A Canon Communicator is a portable, electronic writing aid with printout on a strip of paper. It can be fastened to the arm or to a wheelchair, for example with Velcro. **No. 22**

Even simpler equipment, such as the **Birgitta Roller**[2], can be dealt with by seriously disabled children and can be fastened to a wheelchair. It consists of a roll of paper with messages or symbols which are contained in a plastic cylinder. By turning the roll the message becomes visible in the cylinder's "window".

A sight indicator frame[3] can also be fastened to a wheelchair. A table model is also available. By indicating with a look somewhere at the transparent frame's symbols, one shows what one wants to say. The person one is communicating with sits on the other side of the sight indicator frame. For children with serious disabilities sometimes it is necessary to use **chin, forehead or mouthpegs**[4] (See also the chapter "Manageability"). **No. 23**

When a message is intended to be read by a group of people, for example in a classroom, there are keyboards which can be coupled to a TV monitor. When the child writes on the keyboard, **the text appears on the TV screen**[5].

An electric page turner, which is operated by various types of controls, makes it possible for the very severely disabled to thumb through a book or newspaper themselves.

Cassette players are used assiduously by handicapped children. They are essential for being able to use talking books, that is to say tape recorded books for the visually impaired and seriously disabled. The tape recorder's keys may be adapted for children with impaired hand motor function so they can operate it independently.

A relaxed sitting position ought not be forgotten when one "communicates", since body attitude influences the ability to speak and the ability to maneuver. The **desk chair**[6] in a size for children is adaptable in many different ways. It can be raised and lowered; the armrests and back of the chair are adjustable. Therefore, this kind of chair is a useful tool for this activity.

Communicator

TIPS:

Be Symbols – to fasten to communications tables, pictures may be purchased at **RPH-RH**, Göteborg as well as from **Geelsgaard** Kostskole, Denmark.

Forehead lamp – an aid for pointing which is fastened to a helmet so the child, using head movement, can point with the lamp's cone of light. It is used, for example, to point at Be Symbols.

Note Holder – as a complement to a writing apparatus.

Foot Plate for children who write with their feet on electric writing machine. (Information is taken from British Occupational Therapy, June 1975.)

Stamps for letters and numbers with handles (See also the chapter "The School").

Magnetic Alphabet to place on a magnetic surface.

Holder for Telephone Receiver – for disabled children who don't wish to use a speaker phone. **No. 31**

For hearing impaired and deaf children

Door and telephone signals. For hearing better when the doorbell or telephone rings, louder bells than normal may be installed, or ones with more distinguishable sound, easier for the child to identify. When that isn't enough, or when the stronger signals are too disturbing for others, one can use the so-called "optical indicators" for signals. When there's a signal, lamps flash at different rates, depending upon whether it's a door or a telephone signal. **Telephone receiver with Amplifier.** For home use one can have the usual telephone receiver changed for one with a special amplifier. **No. 24**

The volume of the sound can be regulated with a little knob according to the need of the family member who for the moment is using the telephone. **Earphones – Headset.** One way to seal out disturbing sound when the child watches TV or listens to the radio is the use of earphones. **TV Aid**. A TV Aid conducts the sound directly from the radio or TV into the ear via a cord. If the child has a hearing aid, the earplug for it may be used, but a special earplug is included with the TV Aid. **No. 25**

For visually impaired or blind children

Binoculars are a good aid when watching TV or reading signs outside. Many with low vision find it useful to get texts enlarged with the help of a magnifier. There are many types of magnifiers with respect to quality, magnification and field of vision. Magnifiers with built-in lights may also be an advantage for many. **No. 26**

Talking books, that is to say books and newspapers recorded on tape, are an invaluable aid for many who are visually impaired and blind. A cassette tape recorder is needed to be able to use talking books. The tape recorder may also be used in two-way communication for messages and instructions, etc. Younger children may as well use the tape recorder for play, recording their own programs, using their imaginations, listening and guessing various recorded sounds.

Adding machines, as well as the **Canon Communicator** (see illustration on p. 48), are also available with printout in Braille for those who need it.

Notes

daptability

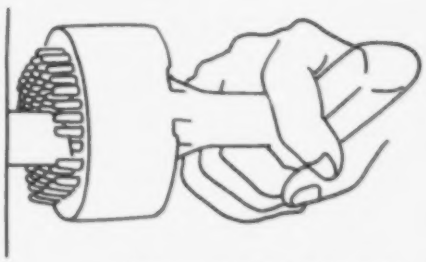
One basic condition for allowing the handicapped child to perform an activity which involves arm-hand movement is a good sitting position. For example, it may be suitable to use a work chair with many adjustment possibilities, for example the **Vela Chair**[1], as well as a **footstool**[2] which can be adjusted to different table heights. To be able to manage different implements in every day life, it is essential to change and adapt the implements. The most common way to do this is to enlarge, add to or form a new grip. Foam rubber tubing and similar material are used as "thickeners" for flatware handles, pens, etc. When handles are lacking or need to be reshaped, "**firm grip**" material[3] works as a model. It consists of two plastic mass components which harden in a union with each other. It is well-suited, among other things, for grips on pens, zipper tongues, mugs and glasses. There are even **ready-made maleable handles**[4] to put on mugs and glasses.

One can adapt, for example, saws, screwdrivers and scissors by equipping them with an extra handle for two-hand use for those who have weak arms or hands. For children who can only use one hand, a fastening device on the work surface can make it easier to work.

In certain situations a handle on the table is essential so the child can stabilize himself with one hand while working with the other – see the chapter "The Kitchen – Dining Area". It is common to replace ordinary handles with enlarged knobs, push buttons and handles. A faucet turner is an example of such a lengthened grip.

Sometimes it is necessary to fasten implements in the hand so they can be used. Eating utensils are often fastened on with leather straps, **Velcro** bands or some type of hand-arm splint. Many holders are homemade and vary greatly in appearance, function and choice of material. An example of this is different **pencil holders**[5], eraser holders and **chalk holders**[6], but there are also some ingenious holders on the open market which are worth trying. Either the implement is fastened in the hand or also the work is fastened to the work surface. Fasteners for work material which have proven themselves to be useful, for example, are **nonslip material**[7], weights or magnets which hold the material in place (See the bulletin board in the chapter "The Child's Room"). Ordinary or specially **designed clamps**[8] as well as paper clips are usable in a variety of situations. For example, one's crutches may be fastened to the edge of the table with a clamp or some other crutch holder. Paper clips might even be used as note holders on crutches. **No. 27 – pencil holders**.

It isn't always that the problems of adapting are solved with these aids. For children with serious disabilities it is sometimes necessary to use chin, **forehead or mouth pegs**[9] to point, paint or maneuver equipment in their surroundings. Forehead and chin pegs are usually fastened on a helmet which the child puts on his head. Mouth pegs are held in place with the help of a special mouth shield. Children with severe disabilities may also use rocking[10], chin, suction and blowing, control for maneuvering remote systems, for example, for lighting, TV, door openers or even electric trains.



Universal grip "Taggen"

TIPS:

Triangle Grip for pencil.

Special Screw Driver – from Refsnaes Materials, Denmark.

Pen Holder in metal to be fastened to a glass for securing a straw.

Pencil Sharpener with a suction cup base.

"The Third Hand" – a clamp with joints, adjustable to any desired directon.

"Taggen", the universal grip – holds various handles, grips and knobs. See illustration below.

Paper Clip – from the Danish Børnehjelpemidler brochure.

Notes

School

The work place

In the school the work place's design is the center of our interest. Shortage of room in the school sometimes makes it impossible to solve some problems satisfactorily. Schools where the pupils have to change classrooms between classes involve great problems for the disabled pupil.

There are **school desks**[1] which have been developed to suit the disabled and have, for example, a pedestal instead of a desk lid as well as other details which simplify the work situation. A table with an angled and/or divisible top and adjustable height are also useful in a school. Sometimes only the angled top is needed, which is then placed on an ordinary table. **No. 28** – school desks.

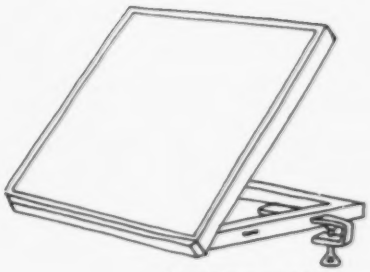
Desk chairs, such as Vela, Mercado and the **Rida Chair**[2], are all suitable school chairs which can be adjusted to every pupil's individual need and then "grow with the pupil." The Rida Chair differs from the other chairs in that one sits astride it as with a saddle. If there is need of a **footstool**[3], it ought to be adjustable in height and angle.

For those who have a hard time opening the desk top, there's a desk top opener, a spring system which simplifies opening, and holds the top in an open position.

Various communication aids are often used in the teaching situation. The electric typewriting system is one example of that. It is diversely adaptable for hand, foot, suction or blowing operation or with any other proven method of operation for children with seriously **reduced hand function**[4]. Continuous **paper on a roll**[5] makes it much easier for someone who can't put paper in the machine. It may then also be difficult to turn the plate, which becomes easier with a **wrist roller**[6] instead of the knobs. **No. 30**

Pupils with reduced ability in their arms and hands may need **stamps with numerals or letters**[7], a compass with **enlarged grip**[8], a **heavy ruler**[9], a **large eraser**[10] or the like to be able to deal more easily with school work.

If walking aids are used, it is difficult to carry a school bag at the same time. A backpack then may be useful. Furthermore, it is a considerably healthier way to carry heavy loads, which is true for the rest of us as well.



1 writing surface

TIPS:

"Carry It Easy" Harness for carrying a school bag in.

Shopping Bag on Wheels – an alternative to carrying a bag.

A holder for felttip pens can easily be produced from a piece of wood with holes in which the caps of the pens are sunk. The pens stand upright, upside down, in the holder for easier gripping. (See p. 5)

Drawing templates with handles and magnets.

Nonskid support for a chair – glide-free feet, a rubber mat and foot support are linked together – a complement to chairs and increases security in sitting.

Reading Stand – adjustable in angle, with floor stand or for table.

Magnetic Writing Pad as well as magnets; shirt cuff with magnets – holds the paper in place.

An ordinary pencil sharpener may be equipped with a suction cup. Useful for children with reduced strength and for children who only have use of one hand.

Crayons – **Mothercare** – triangular and easy to hold.

For hearing impaired or deaf children

Headset and Amplifier. To produce more distinct sound and for shutting out noise and other disturbing sounds in the surroundings.
Cordless Microphone. A microphone which the speaker carries with him and which is connected to a transmitter. The child has a receiver.
Portable Headset Amplifier. With this apparatus a group can talk and listen to each other as well as to the teacher.
Earphones. Another way to shut out disturbing sounds when a child watches TV or listens to the radio. When using earphones, a hearing aid is not used. **No. 25**

For visually impaired or blind children

Most aids which are used in school have already been mentioned in earlier chapters. Therefore, this section should not be seen as complete but rather as a complement. A school desk with angled top makes it easier for many visually impaired pupils. Work is brought closer when the top is angled and disturbing reflections from the top are eliminated. There is also a separate angled work surface. It may be placed on an ordinary table.

Lighting has to be well suited to the pupil's work place. (Lighting is dealt with more thoroughly in the chapter "The Child's Room".)
A magnifying glass may be used in several ways. It was mentioned earlier as an accessory for a typewriter, but may also be held in the hand or hung around the neck.
A Compass may be adapted in different ways. Equipped with a heavy marking cartridge and a separate extension, it is an excellent aid for sight.
A tape recorder is used constantly in school and is described more completely in the chapter "Communication".
Special paper and writing blocks are available for Braille, typing and writing and with extra heavy lines for those with low vision.
Textbooks can be enlarged. That is done, however, to a limited extent since it has been shown to be very expensive.
An alternative to writing is use of stamps, as an example with one's own name on one.
In mathematics instruction on an abacus has shown itself to be a useful aid.
Maps and globes are available in relief. There is also a possibility for enlarging textbooks' print and illustrations.
Magnivision Reading TV. This can be used for reading, writing, sketching and diverse other uses. **No. 29**
One should observe that pupils with low vision can learn a great deal by seeing pictures with this apparatus. The apparatus consists of a TV camera which transmits word and picture to a TV screen. The degree of enlargement may be varied according to each person's need, and the picture and text may either be black against white background or just the opposite.
Talking calculators and clocks are now also available. **No. 32, 33**

List of Suppliers

(By Chapter)

Appendix A – List of Foreign Suppliers (by item number as they appear in the pictures)

The Child's Room

2	Mobile	Hagland and Hanse's Design Borganäsvägen 20 S-781 00 Borlänge, Sweden
4	Bed Guard of Material	Homemade
	Bed Guard of Plexiglass	Børnehjelpemiddler A2 4/24 (Loose leaf information folder – Karen Rygaard, Ergonomics Therapist Socialstyrelsen, Kristineberg 6 Box 2555, DK-2100 Copenhagen, Denmark
5	Lift Mechanism for Bed	AB Bedco Box 7027 S-811 07 Sandviken, Sweden
6	Corner Seat	Rehab Konsult AB Box 8110 S-163 08 Spånga, Sweden
7	Foam Rubber Arm Chair	Specialplast Odengatan 82 S-133 22 Stockholm, Sweden
8	Bräcke Östergård Chair	Hea Rehab AB Box 55077 S-400 53 Göteborg, Sweden
9	Adjustable Table	Hea Rehab AB
10	Footstool	IDC AB Box 3084 S-350 03 Växjö, Sweden
11	Bulletin Board	Open Market
12	Horse	Homemade
13	Play Loco	Hea Rehab AB
14	Pinball Game	Homemade
15	Looseleaf Book	Idea from Central Institute for Cerebral Palsy Bergsallén 21 N- Oslo 8, Norway
16	Pen Holder	Idea from Central Institute for Cerebral Palsy, Norway

TIPS

–	Hammock	Open Market
–	Turnable Bed Table	Børnehjelpemiddler
–	Earphones	Open Market
–	Alarm Clock	Gewa Rehab Technic AB Box 92 S-191 22 Sollentuna Sweden
–	Vibrator	
–	Teddy Bear	
–	Light Indicator	Gewa Rehab Technic AB
–	Clock with Braille Markings	SRF Produkter AB Sandsborgsvägen 50 S-122 88 Enskede, Sweden

The Bathroom - Toilet

1	Shower Table	Rehab Konsult AB
2	Bathtub Liner	Rehab Konsult AB
3	Lift Mechanism	AB Akema Hemvärnsgatan 11 S-171 54 Solna, Sweden
–	Bath Stool	LIC S-171 83 Solna, Sweden
–	Swimming Mask	Open Market
–	Shampooing Screen	Open Market

–	**Bathtub Adaptor**	**Omeco AB** **Box 152** **S-182 12 Danderyd, Sweden**
4	Blender Faucet, Single Knob	Open Market
–	Thermostat Faucet	Open Market
5	Electric Toothbrush	Open Market

TIPS

–	Soap Bag	Homemade
6	Wash Mit	Homemade
–	Bubble Bath	Open Market
7	Soap-on-a-Rope	Open Market
8	Bath Towel Poncho	Homemade
9	Specially Adapted Pottie	ITM AB Gässievägen 75 S-230 42 Tygelsjö, Sweden
10	Toilet Adaptor	Hea Rehab AB
13	Signal System	Open Market
–	Scale with Braille	SRF Produkter AB
–	Nonslip Material	Hea Rehab AB

Clothes - Dressing and Undressing

Patterns and Ideas for the clothes are taken primarily from the book **Sit and Stand**. It can be ordered from Riksförbundet för rörelsehindrade barn och ungdomar. (See List of Literature.)

–	Elastic shoe band	AB Fixfabriken Bruksgatan 17 414 51 Göteborg, Sweden
–	Buckle	
–	Name Labels	Vävnamn – Snabbtjänst Box 4075 431 04 Mölndal, Sweden
10	Dressing Hooks	Idea from Chailey Heritage Chailey Lewes, England
11	Wall Dressing Hook	Homemade
–	Sock Aid	RFSU Rehab Box 17006 S-104 62 Stockholm Sweden

TIPS

–	Rain Cape for Baby Carriage	AB Akema

The Kitchen - Dining Area

1	Tripp Step Chair	AB Akema
2	Extra Table Leaf	Homemade
3	Non-slip Placemat	Hea Rehab AB
4	Plate with Raised Edge	RFSU Rehab
5	Mug with Lowered Back Edge	Idea from Nancie Finnie's book "Handling the Cerebral Palsied Child at Home"
6	Handle on Table	Børnehjelpemiddler A 2.5/5
7	Spoon with Thick Handle	Rehab Konsult AB
–	Rotating Plate	Orthopedic Hospital Copenhagen, Denmark and ITM, Malmö, Sweden
8	One-hand Rolling Pin	LIC S-171 83 Solna, Sweden
–	Rolling Pin	
9	Can Opener	LIC
10	Gustavsberg Knife	RFSU Rehab
11	Cheese Slicer	RFSU Rehab
–	Faucet Knob Turner	LIC and Rehab Konsult AB

TIPS

–	Poke-toward-the-Edge	Rehab Konsult AB

12	Milk Carton Opener	Open Market and Pileprodukter Box 506 S-201 25 Malmö, Sweden
–	Non-slip Tablecloth	Hea Rehab
–	Gustavsberg Cutting Helper	Open Market
–	Scale, Timepiece, etc., with Braille	SRF Produkter AB
–	Onion Holder	Open Market

Fun and Games (Hobbies)
Play and Games

1	Swinging Toy	Bertil Eriksson Pl 5581 Holmen S-761 00 Norrtälje, Sweden
2	Play Stove, Doll House	Homemade
3	Dress-up Clothes "The Hidden Treasure"	Hagland and Hanse's Design
4	Special Dice	Børnehjelpemiddler A 2.7/7
5	Magnetic Game	Børnehjelpemiddler A 2.7/7
6	Control for Electric Train	Gewa Rehabteknik AB
7	Boating Mug	Hea Rehab AB
8	Blunt Children's Scissors	Rehab Konsult AB
9	Sewing Shears with Handle	Børnehjelpemiddler A 2.7/4
10	Scissors with Whole Handle	Homemade
–	Left-handed Scissors	Open Market
11	Adjustable Carpenter's Bench	AB Akema
12	Peg Board	Homemade
13	Sewing Frame for One-handed Use	Folkeskolans Materiallaboratorium Östre Kirkevej 4 DK-7400 Herning Denmark
–	Needle Threader	Børnehjelpemiddler
–	Sewing Machine adapted for the Disabled	Husqvarna

Musical Instruments

14	Maracas	Folkeskolans Materiallaboratorium
15	Holder for Drumsticks	Materiallaboratorium
16	Drumsticks with Special Handles	Materiallaboratorium
17	Electronic Piano "Touch a Tone"	Gewa Rehabteknik AB
18	Music Boat	Hagland and Hanse's Design

TIPS

–	Paint Brush	Esselte Studium AB S-171 76 Solna, Sweden
–	Needle for Sewing Elastic	Harald Löfberg AB Box 744 S-101 30 Stockholm Sweden
–	Training Needle	Harald Löfberg AB
–	Holder for Camera	Børnehjelpemiddler A 2.7/12
–	Toy Bow	Børnehjelpemiddler E 3/5
19	Jump Rope with Special Handles	Homemade
–	ADL Tent	Homemade
–	Weighted Animals	Homemade
–	Table for Water Play	Esselte Studium AB
–	Magnetic Playing Cards, Card Holder	Børnehjelpemiddler A 2.7/14
–	Dominos	Børnehjelpemiddler A 2.7/15

–	Controls, Adapted	Gewa Rehabteknik AB
–	Doll with Hearing Aid	Charlotte Weilbull Box 43 S-230 47 Åkarp, Sweden
–	Balls	Hagland and Hanse's Design
–	Russian Doll	Open Market
–	Hammer Mosaic	Folkeskolans materiallaboratorium
–	Lotto Game	Folkeskolans Materiallaboratorium
–	Twelve-edged Dice	Folkeskolans Materiallaboratorium
–	Drawing plate	Västmannaprodukter Box 12045 S-720 12 Västerås, Sweden
–	Self-threading Needle Needle on Thread	Harald Löfberg
–	Sewing Machine for Impaired Vision	Husqvarna
–	Music in Braille	Västmannaprodukter

Conveyance

1	Stroller	AB Akerna LIC
2	Wheelchairs	Siemens Elema AB S-171 95 Solna, Sweden
3	Wheelchair Handles	Hea Rehab AB
4	Go-Cart	Elektronikservice Bengt Nilsson AB Tofta S-280 20 Bjärnum, Sweden
–	Special Car Seats	LIC
5	Turnable Seat	Børnehjelpemiddler D 1.7/1
–	Collapsible Ramp	Handikappramper AB Box 622 S-131 32 Nacka, Sweden

TIPS

–	Baby Buggy	Rehab Konsult AB
6	Rain Cape Travel Sack	AB Akerna
–	Gull Chair	Hea Rehab AB
–	Car Trunk	Børnehjelpemiddler D 1.7/3
–	Tandem Bicycle	Open Market
–	Special Compass	SRF Produkter AB
–	Relief Map	Västmannaprodukter
–	Binoculars	Open Market

Playing Outdoors - Sports and Outdoor Life

WINTER

1	Snow Racer	Open Market

SUMMER

2	Charlotta Chair	LIC
3	Sandbox Table	Esselte Studium AB
4	Swing	Homemade
5	Alpha Cycle	Information Press AB Fredenvägen 15 S-184 00 Åkersberga Sweden
–	Training Wheels	LIC and ITM in Malmö
6	Mini Maxi Bicycle Cart	Riboverken AB Box 2047 S-421 02 Västra Frölunda Sweden
7	Reyma Bathing Cap	LIC
–	Special Swim Trunks, for example Aqua Sport	Poseidon Industri AB Box 6095 S-400 60 Göteborg, Sweden
8	Wheelchair for Active Use	Brio Rehab S-283 00 Osby
9	Special Seat for Sailboat	Livskvalitet HLO AB Box 308 S-443 01 Lerum, Sweden

TIPS

–	Wheelchair Skis	Siemens Elema
10	Wagon	Homemade
–	Swim Collar	LIC
–	Riding Helmet	Open Market
–	Sound Beacon	SRF Produkter AB
–	Special Compass	SRF Produkter AB

Accessibility

CHILD SAFETY

1	Grating for Oven Door	AKTA-butiken Fleminggatan 34 S-112 32 Stockholm Sweden
2	Drawer Lock	AKTA-butiken
3	Furniture Anchor	AKTA-butiken
4	Window Security Lock	AKTA-butiken
5	Melitta Funnel	AKTA-butiken
6	Bicycle Helmet	AKTA-butiken
7	AKTA-REX Children's Bicycle Seat	AKTA-butiken Open Market
8	Children's Car Seats	AKTA-butiken and other shops

Adapting of Dwellings

–	Thermostat Faucet	Thermoscan Värme AB Box 4030 S-203 11 Malmö 4, Sweden
–	One-hand Operated Lever	FM Mattson AB Box 303 S-792 01 Mora, Sweden
–	Automatic Door Opener	Gewa Rehabteknik AB

TIPS

–	Gate for Stairs	AKTA-butiken
10	Non-skid Footstool	AKTA-butiken
–	Seatbelt Pillow	AKTA-butiken
–	Life Vests	AKTA-butiken
–	Child Carrier	AKTA-butiken
–	Carrying Harness	AKTA-butiken
–	Beacons	SRF Produkter AB

Communication

–	Amplified Door and Telephone Signals	Televerket Handikapputrustningar Marknadssektionen S-123 86 Farsta, Sweden
–	Optical Indicators	Televerket
1	Speaker Phone	Televerket
–	Canon Communicator	Canon Svenska Försäljnings AB Box 2084 S-127 02 Skärholmen Sweden
2	The Birgitta Roller	Gunnar Karlström Barkspadevägen 18 S-752 47 Uppsala, Sweden
3	Sight Indicator Frame	Gewa Rehabteknik AB
5	Keyboard with TV Screen	Open Market
–	Electric Page Turner	Gewa Rehabteknik AB
6	Desk Chair	Mercado Rehab AB Box 16348 S-103 26 Stockholm, Sweden
–	Be Symbols	RPH-RH Göteborg Bräcke Östergård S-417 22 Göteborg, Sweden

TIPS

–	Forehead Lamp	Sven Nygren Långgatan 135 S-582 67 Linköping, Sweden and Gewa Rehabteknik AB
–	Note Holder	Jac Jacobsen AB Kråketorpsgatan 10 A S-431 33 Mölndal, Sweden
–	Stamps	Göteborgs Stämpelfabrik Norra Ågatan 10 S-416 64 Göteborg, Sweden

–	Magnetic Alphabet	Terab Utveckling AB Box 169 S-437 00 Lindome, Sweden
–	Holder for Telephone Receiver	Gewa Rehabteknik AB
–	Telephone Receiver with Volume Control	Televerket
–	TV Aid	AB Transistor Box 49093 S-100 28 Stockholm Sweden Unoton ApS Östbanegade 5 DK-2100 København Ö Danmark Widex Akustik AB Box 16015 S-200 25 Malmö, Sweden
–	Talking Books	Västmannaprodukter
–	Cassette Tape Recorder	Open Market
–	Typewriter	Facit and Open Market
–	Magnifier	Open Market
–	Optacon, Reading Aid for the Blind	SRF Produkter AB
–	Writing and Graph Paper with Reinforced Lines	Esselte Läromedels AB Sundbybergsvägen 1 S-171 75 Solna, Sweden

Adaptability

1	Vela Chair	LIC
2	Footstool	Gustavsöner Box 9020 S-151 09 Södertälje Sweden
3	Firm Grip Material	Hea Rehab AB
4	Malleable Handles	Rehab Konsult AB
–	Handle for Two Hands	Homemade
–	Fastening Device	Open Market
–	Handle on Table	Børnehjelpemiddler A 2.5/5
–	Large Wheels, Snaps and Knobs	RFSU Rehab
–	Fasteners for Cutlery	Rehab Konsult AB
–	Hand/Arm Splints	Børnehjelpemiddler A 2.5/7 and Folkeskolans Materiallaboratorium
5	Pencil Holder	RPH-RH
–	Eraser Holder	Stationers
6	Chalk Holder	Homemade
7	Fasteners – Weights	RPH-RH
8	Specially Designed Clamp	Folkeskolans Materiallaboratorium
–	Paper Clips	Stationers
–	Crutch Holder	Folkeskolans Materiallaboratorium
–	Forehead Peg	Gewa Rehabteknik AB
–	Chin Peg	Bräcke Östergård Ortopedverkstaden S-417 22 Göteborg, Sweden
9	Mouth Peg	Telmia Gyldenløvegade 4 DK-1369 Copenhagen Denmark
10	Control for Use by Rocking, Chin, Suction and Blowing	Gewa Rehabteknik AB

TIPS

–	Triangle Grip	Hodab Box 49 S-190 40 Rosersberg Sweden
–	Special Screwdriver	Folkeskolans Materiallaboratorium
11	Pencil Sharpener with Suction Cup Base	Homemade

–	Taggen, Universal Gripper	Rehab Konsult AB and RFSU Rehab
–	Paper Clip	Børnehjelpemiddler D 1.2/4

The School

1	School Desk	Luna AB/Skol-Luna S-441 80 Alingsås, Sweden
–	Table with Adjustable Angled Top	Rehab Konsult AB and AB Akema
–	IA Writing Surface	Luna AB/Skol-Luna
2	Rida Chair	AKTA-butiken
3	Foot Stool	Curt Enström AB Box 45 S-163 21 Spånga
4	Control for Use by Hand, Foot, Suction and Blowing	Gewa Rehabteknik AB AB Akema
5	Continuous Paper	Gewa Rehabteknik AB
6	Wrist Roller	Gewa Rehabteknik AB
7	Stamps	Göteborgs Stämpelfabrik Norra Ågatan 10 S-416 64 Göteborg, Sweden
8	Compass with Enlarged Grip	Børnehjelpemiddler B 4/2 Børnehjelpemiddler B 4/2
9	Heavy Ruler	Pedagogiska Produkter Brunnstorps Uppegård 958 S-420 14 Säve, Sweden
10	Large Eraser	Stationers
–	Holder for Crutches	Folkeskolans Materiallaboratorium

TIPS

–	"Carry It Easy" Harness	Rehab Konsult AB
–	Shopping Bag on Wheels	Open Market
–	Holder for Felt Tip Pens	Børnehjelpemiddler A 2.7/3
–	Drawing Templates	Folkeskolans Materiallaboratorium
–	Non-skid Support	Hea Rehab AB
–	Reading Stand	Hea Rehab AB
–	Magnetic Writing Pad	Terab Utveckling AB Box 169 S-437 00 Lindome, Sweden
–	Head Set	Hörcentral
–	Cordless Microphone	Hörcentral
–	Portable Head Set Amplifier	Hörcentral
–	Desk with Angled Top	Luna AB/Skol-Luna
–	Magnifying Glass	Open Market
–	Compass	Open Market
–	Tape Recorder	Open Market
–	Special Paper	Esselte Läromedels AB
–	Abacus	SRF Produkter AB
–	Relief Maps and Globes	Västmannaprodukter
–	Magnivision, Reading TV	Elektron Optik Storgatan 30 S-352 31 Växjö, Sweden
–	Talking Calculators	Panasonic Open Market

List of North American Suppliers

Appendix B

With numbered items, corresponding to numbers which appear in the text at the end of the paragraph which is concerned with that type of item. Actual brand names are not given. Interested persons can write to the suppliers about a particular item. (Addresses of Suppliers in Next Section).

The Child's Room

Item No. 1 **Chair Leg Extender (p. 7)**

- Abbey Medical
- Camp International
- Comfortably Yours
- Cleo Living Aids
- Fred Sammons, Inc.
- Graham Field Surgical
- Help Yourself Aids
- Jan Surgical
- Roloke Co.

Item No. 2 **Baby Cry Signal (p. 7)**

- American Communications Corp.
- Bell Telephone Cos. with Telecommunication Centers for Disabled Persons
- Canadian Hearing Society
- Hal Hen Co.
- KE Series Electronic Devices
- Nationwide Flashing Signal Systems
- Phone TTY, Inc.
- Sonic Alert
- Sound Barrier
- Ultratec
- Weitbrecht Communications, Inc.

Item No. 38 **Bed Vibrator (p. 8)**

- Nationwide Flashing Signal Systems, Inc.
- Phone TTY, Inc.
- HAL-HEN CO. INC.

Item No. 3 **Speech Training Toys** (Sound Activated Speech Therapy Aid) (p.8)

- Knightsbridge Medical
- Manhattan Empire Chapter, NY Telephone Co.
- Theodore N. Vail State Chapter
- Wolverine Chapter, Michigan Bell Telephone Co.

Item No. 36 **Flashing Light Signals (p. 8)**

a) Telephone Signals
- Nationwide Flashing Signal Systems, Inc.
- Phone TTY

b) Wake-Up Alarm Converter
- Nationwide Flashing Signal Systems, Inc.

c) Smoke-Alarm
- Maryland Chapter, The Chesapeake and Potomac Telephone Co.

d) Flashing Alarms
- Telephone Pioneers of America

e) Doorbell Signals
- Phone TTY, Inc.

f) Flashing Light Remote Control Transmitter
- Weitbrecht Communications, Inc.

(HAL-HEN CO. INC. Carries all types of flashing signals)

The Bathroom

Item No. 37 **Shower Table/Stretcher/Commode (p. 12)**

- Mobility Plus
- Trujillo Industries

Item No. 4 **Bath Slings and Support Rings (p. 12)**

- Abbey Medical
- Achievement Products, Inc.
- Carnac Industries
- Columbia Medical Manufacturing
- G.E. Miller
- J.A. Preston
- Modular Medical Corps

Item No. 39 **Anti-Scald Guard (Thermostat Faucet (p. 13)**

- Delta Faucet Co.

Item No. 5 **Soap Bag and Wash Mitt (p. 14)**

- American Bio Medics
- Fred Sammons, Inc.
- Hammacher Schlemmer
- Maddak, Inc.
- NuDay Creations

Item No. 6 **Pottie/Commodes/Seat Reducer/ Shower Chair (p. 14)**

- Abbey Medical
- Cleo Living Aids
- Fred Sammons, Inc.
- G.E. Miller, Inc.
- J.A. Preston
- Lakeshore Curriculum Materials
- Motor Development Corp
- OrthoKinetics, Inc.
- Rifton Equipment for the Handicapped

Adapted clothing for children (Dressing Aids/Sewing Aids)

Item No. 7 **Clothing (p. 18)**

- On the Rise (All kinds of clothing)
- PTL Designs (jumpsuits, trousers, skirts, robes, nightgowns)
- Sitting Pretty, Sitting Proud (Jeans)
- Techni Flair Corp. (warm-up suits, trousers)

Item No. 8 **Shoe Fasteners (Zipper fasteners, elastic shoe laces) (p. 18)**

- Cleo Living Aids
- FashionAble
- Fred Sammons, Inc.
- Help Yourself Aids
- J.A. Preston Corp
- Maddak, Inc.
- Medi Sport Corp.

Item No. 9 **Dressing Aids (p. 19)**

- Adaptive Enterprises

Item No. 10 **Stocking Aids (p. 19)**

- Adlib Orthotics
- American Biomedics
- Comfortably Yours
- Engle Enterprises, Inc.
- Fred Sammons Inc.
- Handi Aid Co.
- Help Yourself Aids
- J.A. Preston
- Rajowalt
- Sears, Roebuck & Co.
- Sock-On
- Susquehana Rehab. Products

Item No. 11A **Labeling for Clothing (p. 20)**

- American Foundation for the Blind
- Kentucky Industries for the Blind

Item No. 12 **Sewing Aids (pp. 20 & 29)**
Scissors

- Aristera (lefthand)
- Comfortably Yours (Scissor with flexible handle)
- FashionAble
- Fiskars (lefthand)
- Fred Sammons Inc.
- Nelson Medical Products
- Maddak, Inc.

Magnifying Lens with Neck Strap

- American Foundation for the Blind
- Comfortably Yours
- Maddak, Inc.
- Magnistitch

Item No. 12a **Needle Threaders (p. 20)**

- American Foundation for the Blind
- FashionAble
- Maddak, Inc.

Item No. 12b **Patterns Manual (p. 20)**

- Textile Research Center (Texas Tech. Univ.)

The Kitchen and Dining Area

Item No. 13 Non-Slip Placemats and Molded Pads (p. 23)

- Abbey Medical
- Cleo Living Aids
- Fred Sammons, Inc.
- G.E. Miller
- Help Yourself Aids
- Maddak, Inc.
- Medical Equipment Distributors

Item No. 14a Drinking Cup (pp. 23 + 24)

- Abbey Medical (with spout)
- Fred Sammons, Inc. (with holder)
- G.E. Miller (with spout, 2 handle)
- J.A. Preston (twin handle)
- Maddak, Inc. (clip-on drink holder, non-slip base, etc.)
- Sola, Inc. (glass)

Item No. 14b Drinking Straw (p. 24)

- Cleo Living Aids
- Fairway King
- Fred Sammons, Inc.
- Help Yourself Aids
- Maddak, Inc.
- Medical Equipment Distributors
- Nelson Medical Products

Item No. 14c Food Warmer Dish (p. 24)

- Fred Sammons Inc.
- Maddak, Inc.

Item No. 14d Food Guard (p. 24)

- American Bio Medics
- Fairway King
- FashionAble
- Fred Sammons
- Handi Aid Co.
- Sears & Roebuck

Some other items for the kitchen and dining area available at the above-named suppliers include **scoop dishes and bowls, wheelchair drink holders.**

Item No. 40 Milk Carton Opener, Carrier (p. 24)

- Abbey Medical
- American Bio Medics
- Comfortably Yours
- Grayline Housewares
- Independence Factory, The
- Maddak, Inc.

Play, Hobby & Recreation

Item No. 15 Toys (p. 28)

a) Battery-Operated Toys
- Benjamin Michael Industries
- Electronic Handicapped Equipment, Ltd.
- Linda Burkhart (homemade)
- Telegraphics, Inc.
- Toys for Special Children
- Visualtek
- Zygo Industries, Inc.

b) Foam Rubber Toys
- Able Child
- J.A. Preston
- Rifton Equipment for the Handicapped
- Southpaw Enterprises

c) Child life-size dolls
- Abbey Medical
- Adaptive Enterprises (dressing doll)
- Ronnie Lee, Inc. (Best Friends)

d) Stuffed Animals
- Special Friends (animals with disabilities)

e) Rocking Friends (animals with Safety Seat)
- Able Child
- Community Playthings

f)
- Talking Toy Kit
- H.G. McCully Upstate Chapter-NJ Bell Telephone Co.

g)
- Battery Interface Control
- Prentke-Romich

Item No. 16 Strollers (16.A) and Sports Wheelchairs (16.B) (p. 34)

Item No. 17 & 42 Cycles (specially equipped) (pp. 35 & 38)

- Abbey Medical
- Cleo Living Aids
- Community Playthings
- Consumer Care Products
- Educational Teaching Aids
- Gandy Co. (Tandem Bicycle)
- G.E. Miller
- Harper

- Hillan Creative Play Structures
- J.A. Preston
- Maddak, Inc.
- Recreational Mobility, Inc.
- Rifton Equipment for the Handicapped

Item No. 18 Sandboxes and Playground Equipment (p. 38)

- Abbey Medical
- Wooden Environments, Inc.

Item No. 19 Adaptive Equipment for Winter and Summer Sports Activities (p. 38)

a) Skiing, Skating, Sledding

- Beneficial Designs, Inc. (ski, sled)
- Hein A Ken (skate aids)
- Mountain Man (ski, sled)
- Mountainsmith (sleds)
- PSI Paul's Sport (ski aids)
- Quandra Wheelchair (snow wheelchair)

b) Adaptive Equipment for Swimming (Pool Lifts, Bars and Transfer Aids)

- Advanced Mobility Systems
- AFW of North America
- Mechanicaids Aquanaids
- Frost Co.
- GEG Pool Lift
- G.E. Miller
- Industrial Research & Engineering
- J.A. Preston
- J.E. Nolan and Co.
- Lo Rich Enterprises
- Northern Plastics Corp
- Trans Aid Corp.
- Triad Technology
- Water Sport Industries

Item No. 34 Miscellaneous: Corner Seats (p. 38)

- Abbey Medical
- Community Playthings
- Equipment Shop
- G.E. Miller
- J.A. Preston
- Maddak, Inc.

Item No. 19A Swimming and Floating Aids (p. 38)

- Bema USA
- Danmar

Item No. 20 Riding Saddle – Adapted (p. 39)

- Grizzly Peak Stables

Bowling Ball Holder

- Snitz Manufacturing Company

Item No. 35 Protective Helmets (p. 44)

- American Automobile Association
- Cleo Living Aids
- Cooper Canada, Ltd.
- Danmar Products, Inc.
- Face Guards, Inc.
- Fred Sammons, Inc.
- G.E. Miller
- J.A. Preston Corp.
- Maddak, Inc.
- Medical Equipment Distributors
- Modular Medical Corp.
- Preston Special Education
- Stall and Dean
- Therapeutic Equipment

Item No. 43 Photography (Adaptive Equipment)

- Beneficial Designs
- Med World
- Therapeutic Recreation Systems

Communication-School

(See also CHILD'S ROOM – No. 2 Baby Cry Signal)

Item No. 22 Portable Communicators (p. 48)

- Adaptive Aids
- Automated Data Systems
- Commetrics, Ltd.
- Computers for the Physically Handicapped
- Crestwood Co.
- Don Johnston Developmental Equipment (also has BlissSymbolics Technology)
- Dufco
- Imaginart Press
- Medelec, Ltd.
- Northern Telecom
  Phonic Ear Phonic Mirror
- Prentke-Romich
- Radio Shack International
- Rahab Technology
- Sharp Electronics
- Shea Products
- Stritonics
- Telesensory Systems
- Texas Instruments
- Triformation Systems
- Words +
- Zygo Industries

Item No. 23 Communication Boards (p. 48)

- Crestwood Co.
- Don Johnston Developmental Equipment
- Fred Sammons, Inc.
- Help Me to Help Myself
- Modern Education Corp.
- Pleasure Endeavors
- Research Plus, Inc.
- Tufts Biomedical Engineering Center

Item No. 31 Holder for Telephone Receiver (p. 49)

- Abbey Medical
- Basic Telecommunications Corp.
- Cleo Living Aids
- Coastline Controls
- Extensions for Independence
- FashionAble
- Fred Sammons, Inc.
- Help Yourself Aids
- Jal Co., The
- Maddak, Inc.
- Medical Equipment Distributors
- Sparr Telephone Arm Co.
- Zygo Telecommunications Corp.

Item No. 24 Phone Receiver with Amplifier (p. 49)

- Adco Hearing Conservation
- Basic Telecommunications Corp
- Bell Telephone Cos. with Telecommunications Centers
- Comfortably Yours
- Desmond J. Carron
- Hammacher Schlemmer
- Harriet Carter
- Leonard's Health Care Products
- Maddak, Inc.
- Phonic Ear Phonic Mirror
- Radio Shack International
- Telecommunications Centers for Disabled Customers
- Telephone Pioneers of America

Item No. 25 TV Amplifiers (p. 49)

- Adaptive Communications Systems, Inc.
- Comfortably Yours

Item No. 26 Optacon (p. 49)

- Clement Design Labs
- Telesensory Systems, Inc.

Item No. 27 Pencil Holders (p. 52)

- Abbey Medical
- American Bio Medics
- Blackburn Research Products
- Cleo Living Aids
- Fairway King
- Fred Sammons, Inc.
- Help Yourself Aids
- Independence Factory
- Maddak, Inc.
- Medical Equipment Distributors
- Richards Manufacturing

Item No. 28 Child's Desk (p. 56)

- Abbey Medical
- Cleo Living Aids
- G.E. Miller, Inc.
- J.A. Preston Corp.
- LaBerne Manufacturing
- Medical Equipment Distributors

Item No. 29 Low Vision Reading Systems (p. 57)

- Adaptive Communications Systems, Inc.
- Apollo Electronic Visual Aids
- Best Visual Products
- Clement Design Labs
- Elayo Americas
- Eyetronics
- Howe Press of Perkins School for the Blind
- Pelcro Industries
- Sensory Aids Corp.
- Telereader Corp.
- Visualtek
- Wormald International Sensory Aids

Item No. 30 Typing Aids, Typewriters, Typing Instruction (p. 56)

a) Instruction
- Cleo Living Aids
- Gregg McGraw Hill
- Teachers Instruction for Special Education

b) Computer Typewriter Programs
- Computers to Help People
- Cyberon
- Don Selwyn (N.I.R.E.)
- Rocky Mountain Software

c) Remote Control Typing Units
- Civilized Hardware
- C.R. Bard, Inc.
- Possum, Inc.

d) Large Print Typewriters and Aids

- Apollo Lazers
- California Retyping, Data Display Syster
- Lozanov Learning Institutes
- SCM Corp.
- Typewriting Institute for the Handicapped

e) Other Typing Aids

- Adler Royal Business Machines
- Cleo Living Aids
- Executive Distributors of America
- Fred Sammons, Inc.
- Medical Equipment Distributors
- SCM Corp.

Item No. 32 Talking Calculator (p. 57)

- American Printing House for the Blind
- Sensory Interface Equipment
- Visual Tek

Item No. 33 Talking Clocks (p. 57)

- American Foundation for the Blind
- Crestwood Co.
- Sears & Roebuck Co.
- Sharp Electronics

Appendix C — ALPHABETICAL LISTING OF ALL U.S. SUPPLIERS (by first initial)

A and B Products
255 University Blvd.
Berrian Springs, MI 49103

A Bec
20803 Higgins Court
Torrance, CA 90501

Abbey Medical
32 16 El Segundo Blvd.
Hawthorne, CA 90250

Able Child
154 Chambers St.
New York, NY 10007

Accumec Corp
32 Race St.
San Jose, CA 95126

Achievement Products, Inc.
P.O. Box 547
Mineola, NY 11501

Adaptive Aids
3721 East Technical Drive No. 7
Tucson, AZ 85713

Adaptive Communication Systems, Inc.
P.O. Box 12440
Pittsburgh, PA 15231

Adaptive Enterprises
P.O. Box 2019B
1120 Main
Standpoint, ID 83864

Adco Hearing Conservation
1558 California St.
Denver, CO 80202

Adler Royal Business Machines
1600 Route 22
Union, NJ 07083

Adlib Orthotics
P.O. Box 905
Lakewood, CA 90714

Advanced Mobility Systems, Inc.
P.O. Box 548
Troy, MT 59935

AFW of North America
Bank of New York Building
Olean, NY 14760

American Bio Medics
P.O. Box 530
Old Bethpage, NY - 11804

American Communication Corp
180 Roberts St.
East Hartford, CT 06108

American Foundation for the Blind
15 W. 16 St.
New York, NY 10011

American Printing House
for the Blind
1839 Frankfort Ave.
P.O. Box 6085
Louisville, KY 40206

American Stair Glide Corp.
4001 East 138 St.
Grandview, MO 64030

Amigo Mobility Center, Inc.
7500 Bluewater NW
Albuquerque, NM 87105

Andrews Maclaren
P.O. Box 2004
New York, NY 10017

Apollo Electronic Visual Aids
P.O. Box 7455
Mountain View, CA 94039

Apollo Lazers
20932 Lassen St.
Chatsworth, CA 91311

Aristera
Renovators Old Mill
Miller Falls, MA 01349

Automated Data Systems, Inc.
P.O. Box 4062
Madison, WI 53711

Basic Telecommunications Corp.
4414 East Haramony Road
Fort Collins, CO 80525

Canadian Hearing Society
60 Bedford Road
Toronto M5R 2K2 Canada

Civilized Hardware
925 Elder Ct.
Los Angeles, CA 90042

Clement Design Labs
2560 Wyandott
Mountain View, CA 94043

Cleo Living Aids
3957 Mayfield Road
Cleveland, OH 44121

Coastline Controls
414 East Inman Ave.
P.O. Box A
Rahway, NJ 07065

Columbia Medical Manufacturing
P.O. Box 633
Pacific Palisades, CA 90272

Comfortably Yours
52 W. Hunter Ave.
Maywood, NJ 07607

Commetrics Ltd.
P.O. Box 278
St. Lambert, Canada J4P 3N8

Community Playthings
Rifton Equipment for the
Handicapped
Route 213
Rifton, NY 12471

Computers for the Physically
Handicapped
7602 Talbert Ave.
Huntington Beach, CA 92647

Computers to Help People
1221 West Johnson St.
Madison, WI 53715

Com Tek Communication
Technology
375 West Lemel Circle
Salt Lake City, UT 84115

Bema U.S.A., Inc.
2015 Weaver Park Drive
P.O. Box 4280
Clearwater, FL 33518

Beneficial Designs, Inc.
5858 Empire Grade
Santa Cruz, CA 95060

Benjamin Michael Industries
65 E. Palatine Rd.
Suite 105
Prospect Heights, IL 60070

Bernina Co.
534 W. Chestnut
Hinsdale, IL 60521

Best Visual Products
65 Earle Avenue
Lynbrook, NY 11563

BIM
P.O. Box 3413
Terre Haute, IN 47803

Blackburn Research Products
830 Traverse du lac Sergent
Co Portneuf PQ, GOA 2JO
Canada

Brookstone Company
11 Brookstone Building
127 Vose Farm Road
Peterborough, NH 03458

California Retyping,
Data Display Systems
2240 Colby Ave.
Los Angeles, CA 90064

Camac Industries
P.O. Box 7010
353 Bridgeport Drive
Port St. Lucie, FL 33485

Camp International
P.O. Box 89
Jackson, MI 49204

Consumer Care Products, Inc.
6405 Paradise Lane
Sheboygan Falls, WI 53085

Controlonics Corporation
Five Lyberty Way
Westford, MA 01886

Cooper Canada Ltd.
501 Alliance Avenue
Toronto, Ontario M6N 2J3

C.P. Wainman Chapter
Northwestern Bell Telephone Co.
224 South 5th St., Room 1300
Minneapolis, MN 55402

CR Bard, Inc.
731 Central Ave.
Murray Hill, NJ 07974

Crestwood Co.
331 South Third St.
P.O. Box 04513
Milwaukee, WI 53204

Cyberon
1175 Wendy Rd.
Ann Arbor, MI 48103

Danmar Products, Inc.
2390 Winewood
Ann Arbor, MI 48103

Dean Rosecrans
P.O. Box 710
Nampa, ID 83651

Delta Faucet Co.
Div. of Masco Group of IN
P.O. Box 40980
Greensburg, IN 47240

Desmond J. Carron
10541 Farnham Dr.
Bethesda, MD 20014

Don Jonston Developmental
Equipment
981 Winnetka Terrace
Lake Zurich, IL 60047

Dufco
2410 Broad St.
San Luis Obispo, CA 93401

Earmark
1125 Dixwell Ave.
Hamden, CT 06514

Educational Teaching Aids
159 West Kinzie St.
Chicago, IL 60610

Elayo Americas
P.O. Box 23927
Fort Lauderdale, FL 33307

Electrolurgy
1121 Duryea Ave.
Irvine, CA 92714

Electronic Handicapped
Equipment, Ltd.
1299 Portland Ave.
Rochester, NY 14621

Engle Enterprises, Inc.
530 E. 9th St.
No. 1 Azusa, CA 91702

Equipment Shop
P.O. Box 33
Bedford, MA 01730

Everest and Jennings, Inc.
3233 East Mission Oaks Blvd.
Camarillo, CA 93010

Executive Distributors of America
15055 32 Mile Rd.
Romeo, MI 48065

Extensions for Independence
635-5 N. Twin Oaks Valley Rd.
San Marcos, CA 92069

Eyetronics
P.O. Box 693
Lenox, MA 01240

Face Guards, Inc.
P.O. Box 8425
Roanoke, VA 24014

Fairway King
3 East Main St.
Oklahoma City, OK 73104

FashionAble
P.O. Box 3
Rocky Hill, NJ 08553

Flaghouse
18 W. 18 St.
New York, NY 10011

Frank B. Jewett Chapter
Bell Laboratories, Inc.
150 John F. Kennedy Parkway
Room 3L-218
Short Hills, NJ 07078

Fred Sammons, Inc.
P.O. Box 32
Brookfield, IL 60513

Frost Company
6523 14 Ave.
Kenosha, WI 53141

Gandy Company
528 Gandrud Road
Owatonna, MN 55060

GEG Pool Lift
P.O. Box 282
King of Prussia, PA 19406

G.E. Miller
484 South Broadway
Yonkers, NY 10705

Gladys E. Loeb Foundation, Inc.
2002 Forest Hill Dr.
Silver Spring, MD 20903

Graham Field Surgical
415 Second Ave.
New Hyde Park, NY 11040

Grayline Housewares
1616 Berkley St.
Elsin, IL 60120

Grizzly Peak Stables
Berkeley Outreach Program
271 Lomas Cantadas
2539 Telegraph Ave.
Berkeley, CA 94704

Hal Hen Co.
36–14 Eleventh St.
Long Island City, NY 11106

Hammacher Schlemmer
147 E. 57 St.
New York, NY 10022

Handi Aid Company
2907 W. Warner Ave.
Santa Ana, CA 92704

Harper
3125 West Hampton Ave.
Englewood, CO 80110

Harriet Carter
Stump Road
Montgomeryville, PA 19836

Hausmann Industries, Inc.
130 Union St.
Northvale, NJ 07647

Hein A Ken Corp.
102 Fosse Court
Thief River Falls, MN 56701

Help Me to Help Myself
324 Acre Avenue
Brownsburg, IN 46112

Help Yourself Aids
P.O. Box 192
Hinsdale, IL 60512

H.G. McCully Upstate Chapter
New Jersey Bell Telephone Co.
540 Broad St. – Room 1300
E. Newark, NJ 07107

H.G. McCully Downstate Chapter
New Jersey Bell Telephone Co.
711 Parkway Ave.
Trenton, NJ 08618

Hilan Creative Playstructures
1750 Courtwood Crescent
Suite 109
Ottawa, Ontario K2C 2B5 Canada

Howe Press of Perkins School for the Blind
175 North Beacon St.
Watertown, MA 02172

Independence Factory, The
P.O. Box C
Middletown, OH 45042

Independent Living Aids, Inc.
111 Commercial Court
Plainview, NY 11803

Industrial Research and Engineering
2409 North Kerby
Portland, OR 97227

IPAS International Corp.
1440 Broadway
Suite 2250
New York, NY 10018

Jal Company, The
3046 Banlet Road
Royal Oak, MI 48073

J.A. Preston
60 Page Rd.
Clifton, NJ 07012

Jay L. Warren
P.O. Box 25413
Chicago, IL 60625

J.E. Nolan and Co., Inc.
1826 Laser Ln.
Louisville, KY 40299

Julian A. McDermott
1639 Stephen St.
Ridgewood, NY 11227

KE Series Electronic Devices for the Deaf
2801 Berry St.
Sioux City, IA 51103

Kentucky Industries for the Blind
1900 Brownsboro Rd.
Louisville, KY 40206-2199

Kilgour Chapter
Cincinnati Bell, Inc.
209 West Seventh St.
Room 107
Cincinnati, OH 45202

Knightsbridge Medical
236 East Castle Harbour
Friendswood, TX 77546

Lakeshore Curriculum Materials
2695 E. Dominguez St.
P.O. Box 6261
Carson, CA 90749

Leonard's Health Care Products
65 19th St.
Brooklyn, NY 11232

Linda J. Burkhart
8503 Rhode Island Ave.
College Park, MD 20740

Lo Rich Enterprises, Inc.
Corner 1st St. and Central Ave.
Suite 112
Miamisburg, OH 45342

Lozanov Learning Institute
1315 Apple Ave.
Silver Spring, MD 20910

Luminaud, Inc.
8688 Tyler Blvd.
P.O. Box 268
Mentor, OH 44060

Maddak, Inc.
6 Industrial Road
Pequannock, NJ 07440

Magnistitch
P.O. Box 2424
Birmingham, AL 35201

Mailhawk Mfg. Co.
Warm Springs, GA 31830

Manhattan Empire Chapter
New York Telephone Company
1095 Avenue of the Americas
New York, NY 10036

Maple Leaf Chapter
Bell Canada
393 University Ave.
F8, Toronto, Ontario M5G 1W9
Canada

Maryland Chapter
The Chesapeake and Potomac
Telephone Co. of Maryland
320 St. Paul Place
11 Floor
Baltimore, MD 21202

Maxi-Signal Products, Inc.
5 E. 49 St.
P.O. Box 398
LaGrange, IL 60525

Mechanicaids Aquanaids, Inc.
P.O. Box 405
Olean, NY 14760

Medi Sport Corporation
2545 E. 64 St.
New York, NY 11234

Medical Equipment Distributors
1701 South First Ave.
Maywood, IL 60153

Minnesota Mining and
Manufacturing
3M Company Medical Products
3M Center
St. Paul, MN 55101

Mobility Plus
P.O. Box 391
Santa Paula, CA 93060

Modern Education Corp.
P.O. Box 721
Tulsa, OK 74101

Modular Medical Corp.
1558 Hutchinson River Parkway
East
Bronx, NY 10461

Motor Development Corp.
P.O. Box 4054
Downey, CA 92041

Mountain Man
720 Front St.
Bozeman, MT 59715

Mountainsmith
12790 W. 6 Place
Golden, CO 80401

Nationwide Flashing Signal
Systems
8120 Fenton St.
Silver Spring, MD 20910

Nelson Medical Products
5690 Sarah Ave.
Sarasota, FL 33583

New England Handcycles
228 Winchester St.
Brookline, MA 02146

Northern Plastics Corp.
6733 Myers Rd.
East Syracuse, NY 13057

Northern Telecom
304 E. Mall Islington
Ontario, M9B 2E4 Canada

Nuday Creations
712 Wagonwheel Drive
Fort Collins, CO 80526

On the Rise
171 Grandview Rd.
Nepean
Ontario K2H 8B9 Canada

One to One
P.O. Box 235
Olathe, KS 66061

One Eighty Nine Systems
101 Fox St.
Harrisburg, PA 17109

Orthopedia GmbH
Inter. Med. Equipment
11000 Rush St. No. 4
South El Monte, CA 91733

PCA Industries
2298 Grissom Drive
St. Louis, MO 63141

Pelco Industries
351 E. Alondra Blvd.
Gardena, CA 90248

Phone TTY, Inc.
202 Lexington Ave.
Hacksensack, NJ 07601

Phonic Ear Phonic Mirror
250 Camino Alto
Mill Valley, CA 94941

Pleasure Endeavors
375 Laguna Honda Blvd.
San Francisco, CA 94116

Possum, Inc.
International Hospital Products
82 Birch Ave.
Little Silver, NJ 07739

Prentke-Romich Company
8769 Township Road 513
Shreve, OH 44676

Preston Special Education
60 Page Road
Clifton, NJ 07012

Proctor and Associates
15050 N.E. 36
Redmond, WA 98052

PSI, Pauls Sports
125 Columbia Court
Chasko, MN 55318

PTL Designs
Route 3 Box 745
Perkins, OR 74059

Radio Shack International, (Tandy)
500 One Tandy Center
Fort Worth, TX 76102

Rajowalt Company
Carters Rehabilitation Div.
Atwood, IN 46502

Recreational Mobility, Inc.
P.O. 147
Elmira, OR 97437

Rehab. Technology
c/o George Zurliene
Box 185
Aviston, IL 62216

Research Plus, Inc.
P.O. Box 324
Bayonne, NJ 07002

Richards Manufacturing Company, Inc.
1450 Brooks Rd.
Memphis, TN 38116

Rifton Equipment for the
Handicapped
Route 213
Rifton, NY 12471

Rocky Mountain Software, Inc.
214 – 131 Water St.
Vancouver, B.C. V6B 4M3 Canada

Roloke Co.
8919 Sunset Blvd.
Los Angeles, CA 90069

Ronnie Lee, Inc.
P.O. Box 315
Winter Park, CO 80482

Royal Doulton
700 Cottontail Lane
Somerset, NJ 08873

Science Products
P.O. Box A
Southeastern, PA 19399

Scitronics
523 S. Clewell St.
Bethlehem, PA 18015

SCM Corp.
Smith Corona
65 Locust St.
New Canaan, CT 06840

Sears and Roebuck
Home Health Department (608)
Sears Tower
Chicago, IL 60684

Sensory Aids Corporation
Suite 110, White Pines Office
205 W. Grand Ave.
Bensenville, IL 60106

Selwyn, Mr. Don
N.I.R.E.
97 Decker Road
Butler, NJ 07405

Sensory Interface Equipment
4442 Kasson Rd.
Syracuse, NY 13215

Sharp Electronics
10 Keystone Place
Paramus, NJ 07652

Shea Products
P.O. Box 184
Clawson, MI 48017

Shea Products
2355 Avon Industrial Dr.
Auburn Hills, MI 48057

Siemens Hearing Instruments
685 Liberty Ave.
Union, NJ 07083

Sitting Pretty, Sitting Proud
2112 Eastman Ave. No. 115
Ventura, CA 93003

Snitz Manufacturing Company
2096 S. Church St.
East Troy, WI 53120

Sock On
P.O. Box 4174
Palm Springs, CA 92263

Sola, Inc.
242 W. 27 St.
New York, NY 10001

Sonic Alert
209 Voorheis
Pontiac, MI 48053

Sound Barrier, Inc.
401 – 417 Fayette Ave.
Springfield, IL 62704

Southpaw Enterprises
800 W. Third St.
Dayton, OH 45407

Sparr Telephone Arm. Co.
P.O. Box 143
Allamuchy, NJ 07820

Special Friends
P.O. Box 1262
Lowell, MA 08153

Specialized Audio Engineering
Suite K, 6240 Church Lane
Baltimore, MD 21207

Stall and Dean
95 Church St.
Brockton, MA 02403

Susquehanna Rehab. Products
RD 2 Box 41
9 Overlook Dr.
Wrightsville, PA 17368

Teachers Institute
for Special Education, Inc.
2947 Bayside Ct.
Wantagh, NY 11793

Techni Flair Corp.
P.O. Box 40
Cotter, AR 77626

Ted Hoyer and Company
2222 Minnesota St.
Oshkosh, WI 54901

Telegraphics, Inc.
P.O. Box 1061
Carrollton, TX 75006

Telephone Pioneers of America
Oregon Chapter No. 31
421 S. W. Oak St.
Room 114
Portland, OR 97204

Telereader Corp.
8646-B Production Ave.
San Diego, CA 92121

Telesensory Systems, Inc.
455 North Bernardo Ave.
P.O. Box 7455
Mountain View, CA 94043

Telex Communications
9600 Aldrich Ave. So.
Minneapolis, MN 55420

Texas Instruments
P.O. Box 6448
Midland, TX 79701

Textile Research Center
Texas Tech. University
P.O. Box 5217
Lubbock, TX 79417

Theodore N. Vail State Chapter
Illinois Bell Telephone Company
406 East Monroe St., 3E
Springfield, IL 62721

Therafin Corp.
3800 Union Ave.
Steger, IL 60475

Therapeutic Recreation Systems
1280 28 St. – Suite 3
Boulder, CO 80303

Toys for Special Children
101 Lefurgy Ave.
Hastings-on-Hudson, NY

Trans Aid Corp.
13130 Normandie Ave.
Gardena, CA 90249

Triformation Systems
3132 S.E. Jay St.
Stuart, FL 33494

Trujillo Industries
5040 Firestone Blvd.
South Gate, CA 90280

Tufts Biomedical Engineering
Center
171 Harrison Ave.
Boston, MA 02111

Typewriting Institute
for the Handicapped
3102 W. Augusta Ave.
Phoenix, AZ 85021

Ultratec
P.O. Box 4062
Madison, WI 53711

Vermont-New Hampshire Chapter
New England Telephone &
Telegraph Co.
1228 Elm St.
Manchester, NH 03101

Visualtek
1610 26 St., Dept. C
Santa Monica, CA 90404

Wal Jan Surgical Products, Inc.
Drawer H, 25 Buena Vista Ave.
Lawrence, NY 11559

Water Sport Industries
10230 Freeman Ave.
Santa Fe Springs, Ca 90670

Weitbrecht Communication, Inc.
652 Bair Island Rd., Suite 104
Redwood, CA 94063

Williams Sound Corp.
6844 Washington Ave.
South Eden Prairie, MN 55344

Wings of VGRS
2239 E. 55 St.
Cleveland, OH 44103

Wolverine Chapter
Michigan Bell Telephone Co.
444 Michigan Ave.
Room 1110
Detroit, MI 48226

Wooden Environments
1890 Evergreen Ave.
Speonk, NY 11972

Words +
1125 Stewart Court
Suite D
Sunnyvale, CA 94086

Wormald International
Sensory Aids
Suite 110
Bensenville, IL 60106

YLI corporation
742 Geneviene
Solana Beach, CA 92075

Zygo Industries, Inc.
P.O. Box 1008
Portland, OR 97207

List of Wheelchair Suppliers
(16.A = Strollers; 16.B = Wheelchairs)

A Bec
20803
Higgins Court
Torrance, CA 90501 (16.B)

Abbey Medical
3216 Segundo Blvd.
Hawthorne, CA 90250 (16.A)

Accumec Corp.
32 Race St.
San Jose, CA 95126 (16.B)

Achievement Products
P.O. Box 547
Mineola, NY 11501 (16.A)

American Stair Glide Corp.
4001 E. 138 St.
Grandview, MO 64030 (16.B)

Amigo Mobility Center, Inc.
7500 Bluewater NW
Albuquerque, NM 87105 (16.B)

Andrews Maclaren
P.O. Box 2004
New York, NY 10017 (16.A)

Cleo Living Aids
3957 Mayfield Rd.
Cleveland, OH 44121 (16.A)

Columbia Medical Mfg.
P.O. Box 633
Pacific Palisades, CA 90272
(16.A)

Convaid
P.O. Box 2731
Palos Verdes, CA 90274 (16.B)

E & J Canadian Ltd.
111 Snidercroft Road
Concord, Ontario L4K 1B6
Canada (16.B)

Educational Teaching Aids
159 W. Kinzie St.
Chicago, IL 60610

Electric Mobility
591 Mantua Blvd.
Sewell, NJ 08080 (16.B)

Electrolurgy
1121 Duryea Ave.
Irvine, CA 92714 (16.B)

Equipment Shop
P.O. Box 33
Bedford, MA 01730 (16.B)

Everest and Jennings
3233 E. Mission Oaks Blvd.
Camarillo, CA 93010 (16.B)

Executive Distributors of America
15055 32 Mile Road
Romeo, MI 48065 (16.B)

Flaghouse
18 W. 18 St.
New York, NY 10011 (16.A)

Gorman Products
189 Lake St.
Brooklyn, NY 11223

Invacare Corporation
1200 Taylor St.
Elyria, OH 44035 (16.B)

Jung Products
5801 Mariemont Ave.
Cincinnati, OH 45227 (16.B)

Magnum International
2930 W. Central
Santa Ana, CA 92704 (16.B)

Mastercraft Metal
P.O. Box 591
Santa Cruz, CA 95061 (16.B)

Mobility Plus
P.O. Box 391
215 N. 12 St.
Santa Paula, CA 93060 (16.B)

Modular Medical
1558 Hutchinson River Parkway E
Bronx, NY 10461 (16.A, 16.B)

Motion Designs
1075 Cole
Clovis, CA 93612 (16.B)

Northside Surgical Supply
1165 Portland Ave.
Rochester, NY 14621 (16.B)

Ortho-Kinetics, Inc.
P.O. Box 436
Waukesha, WI 53187
(16.A, 16.B)

Palmco Engineering Company
12005 Rivera Road
Santa Fe Springs, CA 90670
(16.A)

Pin Dot Products
P.O. Box 642
Northbrook, IL 60062 (16.B)
(Standing Wheelchair)

Quadra Wheelchair, Inc.
31125 Via Colinas No. 903
Westlake Village, CA 91361
(16.B)

Safety Travel Chairs, Inc.
147 Eady Court
Elyria, OH 44035 (16.A, 16.B)

Stainless Medical Products
9386 Dowdy Drive
San Diego, CA 92126
(16.A, 16.B)

Theradyne Corporation
21730 Hanover St.
Lakeville, MN 55044 (16.B)

Wheel Ring, Inc.
175 Pine St.
Manchester, CT 06040 (16.B)

XL Wheelchairs
2003 Palm Ave.
Chico, CA 95926 (16.B)

Appendix D

A Selected Alphabetical Listing of Resources for Technical Aids for Children in the U.S.

Books

Organizations

(prepared by Alexandra Enders)

Adaptive Equipment: Inexpensive, Custom Designed, Do-It-Yourself.
Lenor Davis, Sherrilyn Hawkins, and Laurie Raymond.
1979. 81 pages.
No charge. Available from: Educational Service Region, Cook County, 33 West Grand Avenue, Chicago, IL 60610
Patterns and plans for constructing therapy equipment, positioning devices, and other assistive devices from TRI-WALL cardboard.

Aids for Handicapped Readers.
Reference and Information Section, Division for the Blind and Physically Handicapped, Library of Congress. Washington, DC 20542.
Free. Devices and techniques for handling books, writing, and typing.

Application and Construction Notes for Laptrays and Adaptive Pointers
G. Vanderheiden
Trace Center, 1500 Highland,
Madison, WI 53705
1980, 31 pages
$ 3.00
A packet containing application notes describing the construction of various adaptive interfaces and communication charts. Includes Wobble Stick Toy Control (for battery-operated toys). Adaptive Pointers (for communication boards and keyboards). Slide-Away and Swing-Away Laptrays (for wheelchair mounting), and Folding Communication Board (lightweight and highly portable).

Easy to Make Aids for your Handicapped Child
Don Caston
Prentice-Hall, Englewood Cliffs,
NJ 07632
1982 revised American edition,
144 pages
$ 6.95
This practical guidebook contains simple plans for building more than 50 multipurpose aids for children with a wide range of disabilities. It includes chairs, backrests, tables, beds, trolleys, walkers, etc. There are complete detailed instructions for each aid, helpful diagrams of construction techniques, advice on buying wood and using tools, hints on finishing with paint and varnish. The 60 aids described were made by parents and teachers with no special skills in construction and were tested in homes and special schools.

Helping the Handicapped: A guide to Aids Developed by the Telephone Pioneers of America, 2nd edition
Availabe from:
Telephone Pioneers of America. Contact the Telephone Company Headquarters in your city and ask for the local chapter of the Telephone Pioneers of America. Keep trying – they are an elusive bunch to track down, but very helpful once you find the right contact person!

Describes a collection of aids developed for disabled persons by members of the Telephone Pioneers of America. Not designed as a catalog of aids and devices for sale, but as a resource giving approximate costs and the chapter to contact for how-to instructions. Devices are grouped by disability: hearing, motion, retardation, speech and vision. Each item contains purpose, description, background, cost, availability of plans, and contact information. Geographical location of chapters of Telephone Pioneers of America included.

Homemade Battery Powered Toys and Educational Devices for Severely Handicapped Children, 2nd edition
Linda Burkhart
8315 Potomac Avenue,
College Park, MD 20740
1982, 58 pages
$ 5.00, plus $1.00 postage and handling.
This book gives simple directions for constructing toys and switches that can be easily operated by severely and profoundly handicapped children. No special skills are needed to make them. All supplies can be found around the house or purchased inexpensively at local stores. One example is a head control switch. The materials cost about $ 2.50 and take about one half hour to construct. The switch is attached to the child's head with a barrette and plugged into a toy or tape recorder. When the child lifts his/her head, the music or toy turns on, thus giving the child a reason to lift his/her head.

More homemade Battery Devices for Severely Handicapped Children with Suggested Activities
Linda Burkhart
8315 Potomac Avenue,
College Park, MD 20740
1982, 161 pages
$ 12.50
Continuation of the first book. Includes sections on suggested activities for incorporationg these devices into the child's program, safety considerations, and soldering techniques.

How to Build Special Furniture and Equipment for The Handicapped Child
R. B. Hoffman
Charles C. Thomas Publishers,
Springfield, IL
1970
Contains explicit instructions, including pictures, measurements, and materials, for making items such as standing boards, cut-out tables, standing tables, chair inserts, and potty chairs.

Occupational Therapy for Mentally Retarded Children
M. Copeland, L. Ford, and
N. Solon.
University Park Press,
Baltimore, MD 226 pp.
1976. Chapter 6, Adapted Equipment. Suggestions, sketches and construction details for low cost aids that can be constructed in the clinic, classroom or home.

Plans for making Mobility Devices for Children
To obtain free blueprints for a child's wheelchair and tricycle, write to R.J. Reynolds Tobacco Company, Winston-Salem, NC 27102.

Detailed plans for (1) building a child's wheelchair and (2) adapting a regular tricycle into a hand-propelled tricycle.

Please Help Us Help Ourselves
United Cerebral Palsy of Central Indiana, Indianapolis, IN
1979
This manual provides instructions for making inexpensive equipment for disabled children, including utensils, protective devices, and toys. Photographs and drawings accompany the instructions.

Positioning the Client with Central Nervous System Deficits: The Wheelchair and other Adapted Equipment
Valhalla Rehabilitation
Publications, P.O. Box 195,
Valhalla, NY 10505
1982, 191 pages (2nd Edition will be available Summer 1985).
Basic principles of positioning and ways to achieve good postural alignment; discusses commercially available equipment, design for custom positioning devices, and fabrication techniques. Includes bibliography.

Prattle and Play: Equipment Recipes for Nonspeech Communication
Faith Carlson
Media Resource Center,
Meyer Children's Rehabilitation Institute, 444 South 44th Street, Omaha, NE 68131
1983
$ 5.00
The book is aimed toward both professionals and parents who are interested in building toys or communication devices for nonverbal children. The book is arranged in "recipe format" like a cookbook, making it suitable for the novice. The book is divided into two sections. The equipment section includes materials and instructions needed for making equipment. The adaptations section tells how to make special measurements and changes in design for a particular child's needs. The materials used to construct the equipment are principally wood, cloth and plastic.

Products for People with Vision Problems.
American Foundation for the Blind,
Consumer Products Department,
15 W. 16th Street,
New York, NY 10011.
Section on Preschool Products, as well as other devices used by children with vision problems.

Resource Guide to Habilitative Techniques and Aids for Cerebral Palsied Persons of All Ages
E.C. High
George Wasington University,
Job Development Laboratory,
Washington, DC.
1977
Contains resources for aids, equipment, techniques and programs to help people with cerebral palsy. The guide is divided into sections covering general information, positioning and seating, feeding, dressing, hygiene, and household and community involvement.

Self-Help Clothing for Children who have Physical Disabilities
by Eleanor Boettke Hotte
Rev.ed., 1979. 64 p. illus., charts.
National Easter Seal Society,
2023 W. Ogden Ave.,
Chigago, IL 60612
$ 1.00 postage and handling.

Specifications and Drawings for a Wheelchair Lift
J. Hart, J.P. Ryan, Purdue University
Marion County Muscular Dystrophy Foundation, 615 N. Alabama Street, Indianapolis, IN 46204
1077, 69 pages
$ 15.00
A detailed plan, with drawings, for the construction of a platform lift for a van-type vehicle. This lift is not meant to be operated independently by the wheelchair rider. When the lift is retracted or is in its stored position, the entire apparatus is enclosed within the van with a minimum of lost space. Fabrication of this lift requires mechanical ability, but the drawings and instructions seem quite clear and easy to follow.

Children At Home

Handling the Young Cerebral Palsied Children at Home
N.R. Finnie. E.P. Dutton,
New York, NY.
$ 5.95.
1975
This book is a classic. It provides information on home management of children with cerebral palsy for parents, teachers and therapists. Contains suggestions on do-it-yourself devices as well as commercially available equipment, particularly mobility aids. Also includes lists of resources for equipment and accessories.

Handi-Sitters: How to Sit for the Handicapped
M. Cohn and K. Caffey. Available from: Melissa Cohn, OTR, 1812 Mapleleaf Blvd., Oldsmar, Florida 33557
63 pages 1979
Chapter 4: Special Equipment.
Introduction to special apparatus a caregiver needs to understand; simple sketches and reasons for use. A companion teaching manual is also available.

Helping the Severely Handicapped Child: A Guide for Parents and Teacher
P.B. Doyle, J.F. Goodman, G.N. Jeffrey and Lester Mann.
Thomas Y. Crowell, Publishers,
10 East 53rd Street,
New York, NY 10022.
1979
This book will help parents, teachers, and others responsible for the care of children with severe physical and mental impairments to obtain the best public education available and assist in solving specific problems, including the handling of daily at-home activities. Chapter on Special Equipment, pp. 93-108.

Home Care for the Chronically Ill or Disabled Child: A Manual and Sourcebook for Parents and Professionals
Monica Loose Jones.
To be published by Harper & Row, January 1985.
Several chapters focus on uses of assistive devices: Positioning Your Child: Beds, Wheelchairs and Orthopedic Equipment; Exercised and Orthopedic Appliances; Vision, Hearing, and Communication Problems; Bathing, Toileting, and Personal Hygiene; How and in What to Dress Your Child; How and What to Feed Your Child.

The Home Environment

Home Security
Time-Life Books Home Repair and Improvement Series.
Time-Life Books, Alexandria, VA
1979, 136 pages
$ 11.95
This self-help book on home security includes a section on accident-proofing a house, which has 13 pages of directions and sketches for reducing dangerous conditions in bathrooms and on stairs. Features instructions for installation of grab bars, creating a slip resistant surface, adding a rail to a stairway wall, and building an outdoor access ramp.

How to Create Interiors for the Disabled: A Guidebook for Family and Friends
Jane R. Cary
Random House, 201 East 50th Street, New York, NY 10022
1978, 127 pages
$ 11.95
Useful information about techniques and equipment for making a home more functional. Targeted at the family and friends of a newly disabled person who may have had no home planning guidance during rehabilitation, it helps people on their own to equip, build, or modify a room, a house or an apartment for someone who uses crutches, canes, braces, prostheses, or a wheelchair.

A Know-How Manual on Electricity for the Severely Disabled and their Families
A. Auchincloss and M. Youdin
Institute of Rehabilitation Medicine, New York University Medical Center, Rehabilitation Monograph No. 65.
115 pages
$ 12.00
This book has been written to provide information for severely disabled people and their families so that sensible and economically sound choices can be made concerning the electrical assistive systems that will give the greatest independence and improved life style for the disabled persons. Designed to acquaint disabled consumers and their families with basic information that will enable them to use electrical devices safely in the home, it emphasizes proper installation and maintenance of electrical equipment. Contains step-by-step instructions to enable an inexperienced person to make many minor electrical repairs in a home.

Children At School

Accommodating the Disabled Student
James Mueller
Job Development Lab,
George Washington University Rehabilitation R&T Center,
2300 Eye Street NW, Suite 714,
Washington, DC 20037
1981
$ 10.00

Adaptive Equipment for the Handicapped Student: A Resource Manual
Michigan Alliance of Physical and Occupational Therapists,
c/o Wing Lake Center,
6490 Wing Lake Road,
Birmingham, MI 48010
1982
$ 8.00

Multi-Sensory Educational Aids from Scrap
Charles C. Thomas Publishers, Springfield, IL
Describes learning tools for disabled children that can be developed by parents, teachers, therapists, and others at low cost from scrap or inexpensive materials. Patterns and instructions are included for language, mathematics, and science aids.

Ready, Willing and Disabled
Norman Kunc
Personal Library, Publishers,
Suite 439, 17 Queen Street East,
Toronto, Ontario, Canada M5C 1P9
1981, 111 pages
$ 7.95

Describes the process of integrating a physically disabled student into the regular school system. Includes specific suggestions for equipment and adaptations for classes in mathematics, social science, and other subjects. Written by a college youth with cerebral palsy who entered mainstreamed programs at age three.

Organizations

Council for Exceptional Children (CEC)
1920 Association Drive
Reston, VA 22091-1584

The Council for Exceptional Children (CEC) was founded in 1922 to serve those who serve the educational needs of exceptional children. It has 989 local chapters, 46 student associations, 58 federations and 12 special education divisions.

The following are some groups that have a particular interest in disabled children and technology in the classroom.

Artificial Language Laboratory
Department of Computer Science
Michigan State University
East Lansing, Michigan 48824
512/332-1970

Assistive Device Center
California State University-Sacramento
6000 J Street
Sacramento, California 95819
916/454-6916

Children's Hospital at Stanford
Rehabilitation Engineering Center
520 Willow Road
Palo Alto, California 94304
415/327-4800

The Communication Aids and Systems Clinic
University of Wisconsin-Madison
1500 Highland Avenue
Madison, Wisconsin 53705
608/263-7726

Educational Technology Center (ETC)
Box 64
Foster, Rhode Island 02825
401/822-4622

The Non-Oral Communication Center
Plavan School
9675 Warner Avenue
Fountain Valley, California 92708
714/425-6220

Hugh McMillan Medical Centre
(Ontario Crippled Children's Centre)
350 Rumsey Road
Toronto, Ontario M4G 1R8
Canada
416/425-6220

PAM Assistance Centre
601 W. Maple Street
Lansing, Michigan 48909
517/371-5897

The Association for the Severely Handicapped (TASH)
1600 W. Armory Way
Seattle, WA 98119
206/283-5055

Tufts University
Rehabilitation Engineering Center
171 Harrison Street
Boston, Massachusetts
617/956-5036

University of Tennessee
Rehabilitation Engineering Program
682 Court Avenue
Memphis, Tennessee 38163
901/528-6445

Toys & Games

"Adapting Audio/Video Games for Handicapped Learners" Teaching Exceptional Children
Part I: Vol. 14 No. 2, November 1981. Part II: Vol. 14 No. 3, December 1981. Excerpted from **Audio/Visual Games for Severely Handicapped Learners: Possibilities and Simple Adaptations.**
Karen Hughes
Single copy available from Council for Exceptional Children,
1920 Association Dr.,
Reston, VA 22091
$ 3.50
Part I: Provides guidelines for selecting electronic toys and games for disabled children. Discusses 13 specific games such as Simon and Merlin.
Part II: Suggests ways of using adaptive equipment to modify electronic toys and games or to create games for severely disabled children. It includes checklists for adaptations that need to be made, suggestions for do-it-yourself projects, and more profiles of toys and games.

How to Fill Your Toy Shelves Without Emptying Your Pocketbook: 70 Inexpensive Things To Do Or Make
Southwest Education Development Lab, Austin, TX
Available from: The Council for Exceptional Children,
1920 Association Drive,
Reston, VA 22091
1976, 61 pages
$ 3.95
Designed for parents and teachers, the manual contains suggestions for approximately 70 inexpensively constructed games, activities, and manipulative materials for use with handicapped and nonhandicapped young children.

Making Toys for Handicapped Children
Roy McCorkey and Dorothy Jeffree
Prentice-Hall, Inc., Englewood Cliffs, NH 07632
1981, 198 pages
$ 7.95
Provides parents and teachers with simple instructions on how to make toys especially designed to stimulate the development of mentally and physically handicapped children. Photographs and drawings illustrate the construction of each toy. Accompanying suggestions show how to use each toy for maximum benefit to the child.

Toy Libraries

USA Toy Library Association
5490 W. Touhy Avenue
Chicago, IL 60648
312/763-7350

Children with special needs often do not have the same access to toys as other children. One solution to this problem is to start a Toy Library which makes toys available to children in the same way that regular libraries make books available to people. A toy library provides access to a wide variety of high quality playthings for children, and especially for infants and preschool children.

Microcomputers

From Toys to Computers: Access for the Physically Disabled Child
Christine Wright, Mari Nomura
Available from author, P.O. Box 700242, San Jose, CA 95170.
$ 17.00
January 1985 revised edition
Provides an overview of the adaptations and devices physically disabled children can use to interact with the learning tools in their lives. These tools range from toys to microcomputers, and enable the child to play, turn book pages, draw, write and better control the environment. Includes material on switches, adapting battery operated toys; positioning; approaches available for accessing microcomputers, toy lending libraries, etc.

Microcomputer Resource Book for Special Education
Dolores Hagen
1984, 224 pp.
$ 15.95
This book provides an understanding of the microcomputer as a life competency tool. The full spectrum of software and adaptive devices are described. Material is supplied on learning disabled, hearing impaired, visually impaired, mentally retarded, and physically handicapped. Computer needs of each disability group are examined. The advantages and disadvantages of each type of program are weighed. Descriptions of real children's experiences with computers are included. Appendices provide information about more than two hundred publishers of software products. Products are grouped by disability area; detailed information is provided about each program's use. Management programs, information on hardware including adaptive devices, and resources on LOGO are included. Shows how computers can work for children at home and in the classroom.

Children's Computer User Groups

Disabled Children's Computer Group
c/o Lawrence Hall of Science,
University of California,
Berkeley, CA 94720
The Disabled Children's Computer Group was formed in November, 1983 by a group of parents of disabled children. Among the members of the group are parents, teachers and professionals in the field of education, social services and computer technology. The DCCG provides a forum for the sharing of information and experiences about computer applications for disabled children (visually impaired, hearing impaired, physically disabled, learning disabled and developmentally disabled).

Kansas Handicapped Children's Computer Cooperative
HCC, 7938 Chestnut Street,
Kansas City, MO 64132.
Newsletter $ 4.00/year.

Protective Gear

Assistive and Protective Devices for the Handicapped
M.J. Martin (editor)
Georgia Retardation Center,
4770 North Peachtree Road, NE,
Atlanta GA 30338.
July 1981
This manual provides practical information on a selection of adaptive and protective devices such as helmets, eye protectors, mitts, protective gloves, elbow restraints, pelvic supports, etc.

A Resource Guide to Protective Aids
J. Frank, K. Mallik, W. Chiu, and Lowry.
Job Development Laboratory,
The George Washington University,
2300 Eye Street NW, Suite 420,
Washington, DC 20037.
Protective aids are listed according to the part of the body to be protected and the type of protection required. Includes helmets, restraints and supports, slings and splints, pressure relief and skin protection. Lists manufactures and suppliers.

Children's Hearing Aids

"All About Hearing Aids".
Auditory Services Program,
Montgomery County, Maryland,
Public Schools.
Availabe from: A.G. Bell Association, 4317 Volta Place, NW,
Washington, DC 20007.
1975, 12 pages
$ 1.75
Simple instructions for parents and teachers on the care of a child's hearing aid.

Hearing Loss, Hearing Aids and Your Child: A Guide for Parents
Alfred L. Miller. Charles C. Thomas
2600 S. First Street, Springfield,
IL 62717
1980, 97 pages, figures.
$ 7.50
A discussion of the various forms of hearing loss, procedures for evaluating hearing, descriptions of hearing aids, and provisions of speech and hearing therapy in regular schools.

Tim and His Hearing Aid
Eleanor Ronnei and Joan Porter
A.G. Bell Association,
4317 Volta Place, NW,
Washington, DC 20007
1965, 48 pages
$ 3.50
An easy-to-read book for elemen-

tary school children about a young boy learning to use a hearing aid. Illustrated.

Additional Sources of Information for Parents of Disabled Children

The following associations and agencies are among many that provide resources. Write for a list of their publications.

American Academy of Pediatrics
P.O. Box 1034
Evanston, IL 60204

American Medical Association
Bureau of Health Education
525 N. Dearborn Street
Chicago, IL 60610

American Foundation for the Blind
15 West 16 Street
New York, NY 10011
1-212-620-2000

The Association for the Severely Handicapped
7010 Roosevelt Way, NE
Seattle, WA 98115

Council for Exceptional Children
1920 Association Drive
Reston, VA 22091

Library of Congress, Division for the Blind and Physically Handicapped
1921 Taylor Street NW
Washington, DC 20542

National Congress of Parents and Teachers
700 N. Rush Street
Chicago, IL 60611

National Foundation of Dentistry for the Handicapped
1726 Champa
Denver, CO 80202

National Information Center for Handicapped Children and Youth
155 Wilson Blvd.
Suite 600
Rosslyn, VA 22209

The Rehabilitation Engineering Society of North America (RESNA)
1101 Connecticut Avenue NW
Suite 700
Washington, DC 20036
202/857-1199

National Rehabilitation Information Center
4407 8th Street, NE
Washington, DC 20017
1-202-635-5822

Recording for the Blind
20 Roszel Road
Princeton, NJ 08540
1-609-452-0606

The following published monographs are still availabe in book form from WRF. Other issues can be obtained in copied form only from NCHRTM or NARIC.

1979-1984 MONOGRAPHS (WRF)

M12 *People with Disabilities-Toward Acquiring Information which Reflects more Sensitivity to their Problems and Needs* (Philip H.N. Wood, M.D. and Elizabeth Bradley, D. Phil., ARC Epidemiology Research Unit, England.) **$ 5.00**

M14 *Childhood Disability in the Family.* (Elizabeth Zucman, M.D. Centre Technique National D'Etudes et de Recherches Sur les Handicaps et les Inadaptations, France.) **$ 5.00**

M15 *A National Transport System for Severly Disabled Persons-A Swedish Model.* (Birger Roos, National Transport Board for the Handicapped, Sweden.) **$ 2.00**

M18 *International Approaches to Issues in Pulmonary Disease.* (Irving Kass, M.D. Editor, University of Nebraska Medical Center.) **$ 4.00**

M21 *Rehabilitation in Australia: U.S. Observation.* (Contributions from Several WRF Fellows.) **$ 5.00**

M23 *Methods of Improving Verbal and Psychological Development in Children with Cerebral Palsy in the Soviet Union.* (Robert Silverman-Translator.) **$ 4.00**

M24 *Language Rehabilitation After Stroke: A Linguistic Model.* (Gunther Peuser, Federal Republic of Germany.) **$ 4.00**

M25 *Societal Provision for the Long-Term Needs of the Mentally and Physically Disabled in Britain and in Sweden Relative to Decision-Making in Newborn Intensive Care Units.* (Ernie W.D. Young, U.S. WRF Fellow.) **$ 5.00**

M26 *Community-Based Rehabilitation Services: The Experiences of Bacolod, Philippines and the Asia/Pacific Region.* (Antonio O. Periquet, M.D., Philippines.) **$ 5.00**

M27 *Independent Living and Disability Policy in the Netherlands: Three Models of Residential Care and Independent Living.* (Gerben DeJong-U.S. WRF Fellow.) **$ 5.00**

M28 *The Future of Work and Disabled Persons.* Paul Cornes, (University of Edinburgh.) **$ 5.00**

Notes

"The More We Do Together" is a document of ideas about technical aids for disabled children. It may serve as an introduction for parents, clinicians and others who come into contact with pediatric rehabilitation.

The World Rehabilitation Fund's International Exhange of Experts and Information in Rehabilitation:

The mission of this international program is to improve services to disabled persons in the U.S. through augmentation of the knowledge and skills of rehabilitation-related personnel with information from other countries. The National Institute for Handicapped Research supported program seeks to link U.S. rehabilitation-related personnel with information, persons and programs and policies in other nations with the expectation of enhancing research, education, administrative practices and policies in the United States.

The Nordic Committee on Disability is a cooperative organ of the Nordic Council of Ministers, i.e. the governments of Denmark, Finland, Iceland, Norway and Sweden. The Committee works to promote cooperation between the Nordic countries on different areas relating to disabilities and handicaps. It also acts as an advisory body to the Nordic Council of Ministers.

The Nordic Committee on Disability is made up by a governing board with two representatives from each of the participating countries, and an executive secretariat with five employees.

THE NORDIC COMMITTEE ON DISABILITY
Box 303
S-161 26 BROMMA, SWEDEN
Sven-Olof Brattgård, Prof.
Chairman of the Board
Finn Petrén
Executive Director

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Diane E. Woods
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Project Secretary